

AMERICAN
DENTAL
JOURNAL

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1903

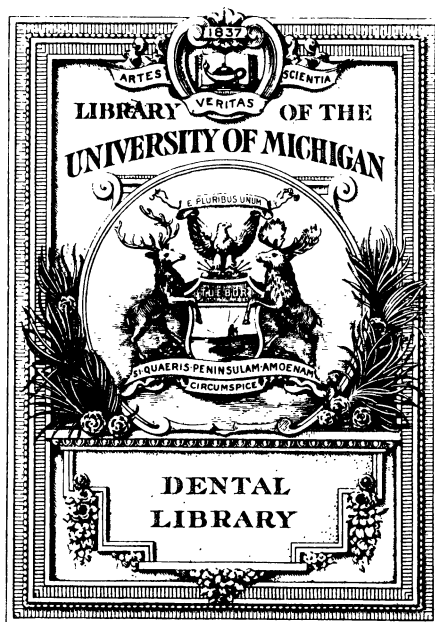
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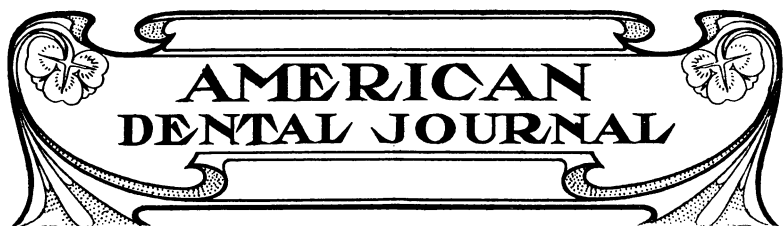
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PUBLISHED ON THE FIFTEENTH OF EVERY MONTH
VOL. 2 APRIL 1903 NO. 4

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Subscription \$1.00 per year in advance, to United States, Canada and Mexico. Other countries \$2.00. Single numbers, 15 cents.

Subscriptions received at any time, to date from January or July. Advertising rates made known on application. Remittance preferred by registered letter, postal money order, or bank draft.

Notification of change in address should be made on or before the 10th of the month in order to have change made in time for the following month's issue.

Address all communications to Frink & Young, Publishers, 607-8-9 Masonic Temple, Chicago, Ill. Telephone, 2072 Central.



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THE PORCELAIN ART.

By Hart J. Goslee, D.D.S., Chicago, Ill.

(Continued from page 206.)

PORCELAIN "BODIES."

The early accomplishments in this field were necessarily somewhat handicapped because of the limited knowledge of what should constitute the characteristics and requirements of a suitable porcelain compound, and, for a number of years the ordinary "*continuous gum*" "bodies" were about the only thing available for all grades and classes of work.

The success achieved with this material, however, even though it was prepared in only one grade and color, opened the eyes of the profession as to the possibilities of porcelain, and caused several enthusiastic adherents, led, perhaps, by Dr. C. H. Land of Detroit, and followed by Downie and others, to pursue a series of experimentations which resulted in the production of less refractory compounds, in a variation of colors.

While these products were, primitively, crude, as compared with those of the present day, their easy manipulation gave much encouragement to those who were interested, and aided materially in bringing about the more or less universal recognition of the possibilities, and the improved facilities, which are now readily apparent and available, and which account for the rapid progress and development of the art.

As is often true, in any application, however, the effort to make the work *easy* and *expeditious* was doubtless carried *too* far, because *facility of manipulation* is but one requirement, and *inherent and integral strength and stability* is another. An absence of an appreciation of this latter feature in any compound for our purposes must result in the signal failures, with their attending discouragement to the beginner, which was the history of the early applica-

tion of several of these "bodies," and which has resulted in their subsequent abandonment for general and extensive use.

These materials served the purpose, however, of creating a demand for more reliable compounds, and of inducing the manufacturers to experiment until the objectionable features might be eliminated, and the maximum of requirements be obtained.

This experimentation has resulted in the production of several classes and grades of material which are capable of being employed with success at the present time, and which differ from each other mainly in fusibility, variation of color, and degree of fineness of texture in which they are prepared.

While the fusibility of any compound of this nature may make it easy or difficult of manipulation, even with the modern facilities at our command, it is at the same time regulated or controlled by the proportion of the more refractory ingredients which it contains; and an analysis of these respective component parts will serve to show that the strength and stability of the compound is also, and, accordingly, regulated to an appreciable degree.

COMPOSITION.

Porcelain "bodies" are composed of silica, feldspar, kaolin and a suitable "flux" and coloring matter. The silica and feldspar are very refractory substances, and are incorporated for the purpose of imparting structural strength, integrity and translucency; and the kaolin, which is a fine grade of clay, is used to impart stability of form to the mass, or to hold the particles together. Thus it will be noted that these constitute the *basal* ingredients, but as their respective and combined physical properties are more or less *refractory*, sufficient "flux" is then added to a formula, composed of varying proportions of these materials, to reduce their tractability, and thus admit of their manipulation with greater facility.

The carbonates of sodium and potassium, which are readily fusible, are generally used for this purpose, and the proportion of "flux" added to the original formula of basal ingredients, together with the degree of fineness of texture in which the entire mass is then pulverized, is what regulates or controls the fusibility, and accounts for the great range of variation in the characteristics and physical properties of the various porcelain compounds.

The coloring matter which is used to afford the desired *tints* must necessarily be more or less infusible in character in order that it may not be burned out, dissipated or otherwise effected in the

fusion or vitrification of the compound, hence the metals or metallic oxides are usually employed.

“HIGH” AND “LOW” FUSING “BODIES.”

It will thus be observed that a compound made up of two individual formulas—one of which is incorporated because of imparting structural stability, integrity and translucency, and the other for the purpose of reducing the refractory properties of these materials—is capable of admitting of a great range of fusibility. This has resulted in the designation of such products as being either “high” or “low” fusing, and the common line of distinction between the two is based upon the fusing point of pure gold. Those fusing above this point require a platinum base, and are known as “high” fusing, while those fusing below may, of course, be used in conjunction with pure gold and are designated as “low” fusing.

The “low” fusing “bodies,” or those compounds which contain a sufficient proportion of “flux” to reduce their fusing point below that of the given line of distinction, and which are commonly designated as “enamels” or “enamel bodies,” are, of course, easier to manipulate from the viewpoint of the amount of heat required to fuse them, and also because of the fact that they may be used on a base of pure gold which it is generally acknowledged can be manipulated with greater facility than platinum. On the other hand, however, even greater difficulties are encountered because of their increased shrinkage, and of their tendency to globulate or lose their form and color as compared with the high fusing “bodies,” if the heat is not shut off at the exact and precise moment of complete vitrification, which is largely due to the proportion and nature of the flux used.

While the *skillful* employment of this class of “bodies” perhaps in inlay work, or in all small pieces which are not to be subjected to any great amount of stress, and where no special degree of strength and integrity is demanded, may be made with success; their tendency to shrink, to change form and to lose their color seems to contraindicate their use in large pieces, such as crown and bridge work, and to add to the difficulties encountered. In this class of work the feature of shrinkage, when resistance is offered such as is afforded by the surfaces of cap and facing, is objectionable, because this induces a degree of *contraction* which doubtless destroys or greatly diminishes the strength and integrity of the mass.

For all classes of work where the maximum of structural strength and integrity; and of stability of form and color is required, the use of the so-called "high" fusing "bodies" is indicated and recommended, and while they are doubtless more difficult to manipulate in so far as heat production is concerned, many tests seem to prove beyond peradventure that the maximum of requirements of a compound to meet these demands is to be obtained in those which fuse between 2200° and 2500° Fahr.

In the successful manipulation of any grade or class of porcelain compounds, however, it must be remembered that the maximum degree of their required and desirable physical properties is obtained *only* at the exact point of their proper vitrification, because a perfect coalescence of the particles will not have taken place at a temperature below that required to produce this physical condition, while a higher temperature than necessary will destroy, or greatly diminish, the strength, form and color.

As the fusibility of all "bodies" may be decreased, and the shrinkage increased by the degree of fineness in which they are prepared, it is only necessary that they should be pulverized sufficiently fine to admit of being packed, contoured and carved with facility; and when so prepared no difficulty will be encountered in obtaining the desired vitreous or so-called "enamel" surface, if the heat is then carried to the proper point.

The following table will give an idea of the approximate fusing points of the various compounds now in common use for all purposes, as recently compiled and based upon the accepted fusing point of pure gold as being 2016° Fahr.:

"Body."	Fusing Point, Fahr.
Jenkins	1544
Ash's Low Fusing	1544
Ash's High Fusing	1904
Moffitt's Porcelain	2047
Brewster's "Enamel"	2084
Consolidated Den. Mfg. Co. High Fusing.....	2192
Whiteley's Porcelain	2210
Brewster's "Foundation"	2300
Close's Foundation Body"	2300
White's Porcelain	2300
Parker's Body	2586

Several of these compounds are now prepared of the proper texture, or degree of fineness; in a good variety of colors, and put up in convenient form for inlay and crown and bridgework, with suitable instruments and shade-guide accompanying; while those intended for continuous-gum work are not pulverized so finely, and are prepared in but one basal color.

Most all of the various makes of body have a *pink* or "gum-enamel" compound to be used in conjunction with them for the purpose of restoring and closely simulating the form and color of the natural gum when necessary.

These always fuse at a lower temperature than the basal "body," and hence should be used only for the purpose of imparting the gum color, and fused *separately*, after the general form has been obtained and the underlying surface is well vitrified.

All of the basal shades, including the pink, are also prepared in the shape of mineral *oil colors*, and form or constitute a convenient and most artistic means of producing color effects. In their use the finely pulverized "body" should be mixed to a thin consistency with the accompanying oil, and then painted upon and over such surfaces as it may be the desire to color, and when thoroughly dry should be separately fused.

The success which has been achieved in this line of work has been made possible by and can be attributed to the constantly improving facilities for the fusing of these compounds perhaps more than to anything else; and the almost marvelous improvement along these lines which has been made in the past decade accounts in a great measure for the prominence of this art at the present time.

The advent of the electric, gasoline and gas furnaces, and their advantages over the coke or blast furnaces which were formerly used, has eliminated all of the objectionable features incident to doing this work, and made it possible for anyone to do it now with ease and facility.

Of the three sources of heat production which are now employed, electricity offers the greatest advantages wherever it is possible to secure the commercial current, because the range and absolute purity of the heat, which may be obtained by passing the current through a continuous coiling of small platinum wire, wound around or slightly imbedded in a thin fire-clay muffle, makes it possible to fuse any "body" in a few moments' time; precludes the

possibility of "gassing" or changing the color of the porcelain, and eliminates the noise, odor or dirt usually incident to the employment of any other means.

These furnaces may now be used on either the direct or alternating currents, but must be ordered for the particular current and voltage at hand, as they are wired especially for, and in accordance with, the requirements of each. Where it is not possible to get a supply of suitable commercial current during the day, the work may be done at night, and these furnaces, for any kind of current, should always be used with more or less care.

In the event of the absence of facilities for using electricity or for reasons of possible emergency or economy, the gasoline and gas furnaces now on the market will furnish adequate heat for any class of "bodies," and may be safely and successfully employed.

In their use, however, the same degree of absolute purity of heat is not afforded, and yet there is but little danger of gassing the porcelain if the continuity of the muffle is perfect, and when it is not, the muffle should be thrown away and another procured.

The gasoline furnaces are perhaps less troublesome to use as the pressure is supplied by means of a pneumatic pump attached, while in the use of the gas furnaces this is obtained by means of the bellows or compressed air. The heat producing power of either, however, depends altogether upon the amount of air pressure obtainable, and this must be kept up during the entire time consumed in fusing.

A further description of the various furnaces combined with their use and the precautions incident thereto, will follow in the consideration of "the manipulation of porcelain bodies" which subject will be next in order.

(To be continued.)



PROSTHETIC DENTISTRY.*

BY B. J. CIGRAND, B.S., M.S., D.D.S.

Prof. of Prosthetic Dentistry and Technics, School of Dentistry
University of Illinois.

CHAPTER II.

TIME NECESSARY TO ELAPSE AFTER EXTRACTION— BEFORE INSERTING DENTURES.

The success of a dental substitute depends largely on the condition of the gums and mucous membrane. To obtain comfort and aesthetic results there is as much danger of waiting too long as there is of proceeding too soon in the taking of an impression. In full cases it is usually most desirable to have the gums perfectly healed and the process fairly well absorbed before the impression should be taken, while in partial cases excellent aesthetic effects can be reached by immediate substitution, though there are a variety of circumstances which determine the time when the impression shall be obtained.

Primarily the time limit is controlled by three circumstances, any one of which should guide the dentist to act in harmony with the indications: First, the patient may be suffering from dyspepsia or other ailment, resulting from complete or partial loss of the natural teeth, the stomach or the brain or both may be emphasizing this derangement of the alimentary tract. Hence the teeth should be replaced immediately because of the threatened condition of *health*. Second, the vocation of the patient may be such as to demand teeth in order to appear more natural or continue to assume social duties. Hence the artificial teeth must be inserted as early as possible, because of the *aesthetic* requirements. Third, the business life of many of our patrons demands that the mouth be restored as soon as nature will tolerate the appliance. They require the teeth in order to re-establish the powers of speech as in cases of the minister, lawyer, actor and lecturer, who receive their compensation by oral effort. Hence the denture is constructed immediately because of *articulation*.

When health, aesthesia and articulation can forego the immediate aid of artificial dentures it is wise to postpone the taking of the impression from three weeks to as many months depending on the

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natural influence of systemic absorption. Usually five or six weeks is all that is required for the gums to heal and the sockets to fill, as well as the radical features of absorption to subside. It would not be advisable to wait until the alveolus is completely absorbed or shrunk to its fullest extent, as this might induce the patient to remain edentulous for upwards of a year, and the injury done to the general system by this prolonged strain on the stomach would produce a variety of nervous difficulties. Besides the alveolus often undergoes absorption and ceases for a time, and then wastes again, so there is positively no definite period established in dental practice regarding the time necessary to insert the denture—the dentist depending entirely on the healing manifestations. The indications of absorption will be discussed when treating the subject of temperaments and additional points will be given relative to osseous changes. Figs. 5 and 6 illustrate complete absorption.

An impression which is taken immediately after the extraction has its advantages, first among which is a copy of the gums before swelling sets in; second, it admits of easy adaptation of the artificial teeth to the sockets as illustrated in Figs. 1 and 2. By this method of substitution there is a most natural appearance, since there is no intervention of pink rubber gum, or padding of the lips. Most cases calling for this method of procedure relate to the anterior six teeth, and when the artificial teeth are selected with reference to proper size and accurately fitted into the sockets there is perfect harmony of expression. The immediate impression is especially indicated in partial cases, but in particular where there is but one tooth missing as the lateral or second bicuspid, as shown in Figs. 3 and 4.

The disadvantages which might be enumerated are: The plate is seldom worn without mischievous results, since the alveolus as well as the soft tissues undergo a most radical change subject to the loss of the natural teeth. The denture seldom gives satisfaction when measured by the laws of cleanliness and hygiene. It also inaugurates, not infrequently chronic sore mouth. Again, a temporary plate of this description produces proud flesh and inflammation of the entire oral cavity including the vestibule of the mouth.

It will be well to understand the term oral cavity and its subdivisions in this connection. The oral cavity is that aperture by which food is received into the body and in which by its peculiar arrangement of muscles, nerves, bones (teeth), mastication, speech,



Fig 1



Fig 2.



Fig 3

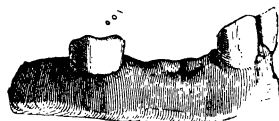


Fig 4

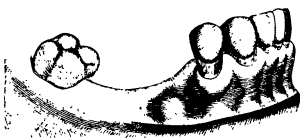


Fig 5.



Fig 6

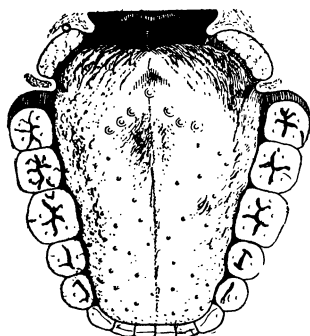


Fig 7.

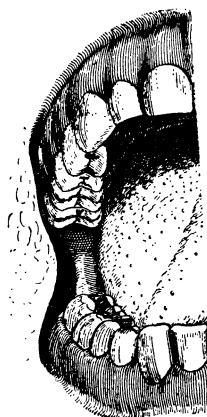


Fig 8.

taste and respiration are performed. This cavity is subdivided into the lingual cavity and vestibule. The former being that portion of the oral cavity in which the tongue moves during the process of speaking, the vestibule being that portion between the teeth, lips and cheeks or corresponding to the mouth external to the teeth and internal to the muscles of the cheeks and lips. Figs. 7 and 8.

Consequently when all the natural teeth are removed, the lingual cavity gets larger, as does the vestibule, since the teeth before extraction acted as the partition, and this being eliminated and absorption setting in enlarges both vestibule and lingual cavity, while the oral cavity practically remains unchanged.

Now, it is the function of a perfect denture to restore the natural size of both the vestibule and lingual cavity, since any encroachment will tend to interfere with some office of the mouth.

It remains a difficult problem to determine the exact restoration of the lost parts, be they dental organs or alveoli, but artificial dentures cannot completely or perfectly restore this loss and waste, since the change continues and consequently the artifice at best would require remodeling after a period of five or seven years. Besides nature, regardless of the surgeons—subtractions—inaugurates a process of absorption, shrinkage and change. The jaws in old age yield to systemic absorption and even the angle of the jaw is disturbed in this era of absorption. There are a few factors which contribute to the process of gnathic absorption, primal among which must be mentioned the power of pressure.

Wherever the denture presses too severely the soft tissues as well as the bony substructure will waste or be absorbed.

This is true throughout the entire animal nature, and in the mouth we have an excellent example in the edentulous mouths of men edicted to the pipe habit. The pressure invoked on the stem to hold the pipe inaugurates absorption at that point, and shortly the alveolar ridges waste away sufficiently to admit of a perfect embrasure of the pipe-stem. We must not underestimate the changes induced through undue pressure at any point of the denture and hence a full understanding of how to construct the denture on an impression taken immediately after extraction becomes all important.

(To be continued.)

DENTAL THERAPEUTICS.

By Geo. W. Cook, B. S., D. D. S.,

Professor of Bacteriology and Pathology School of Dentistry, University of Illinois.

CHAPTER II.

In the treatment of disease the first thing to be considered is to determine so far as possible the cause and the extent of the pathological lesions.

All those diseases that we have anything like a definite knowledge of are usually caused by some form of micro-organisms. This statement should be modified, however, by stating that in traumatic injuries the continuation of the disease process is kept up by bacteria having been introduced at the time or immediately following the injury. In the treatment of such lesions the first step is the prevention of the growth of bacteria in the injured part; but should the bacteria be strong enough to overcome the antiseptic treatment and the resistance of the tissues, then it will be necessary to employ other means of getting rid of these irritating microscopic objects; which would be first to remove as far as possible by mechanical or surgical means, the tissue that is inhabiting these offending substances; and then again applying, if it is possible, a stronger agent which we call a disinfectant.

In this connection we will take up the discussion of the tooth pulp proper, making a membranous layer between the pulp is surrounded by dentine. The pulp tissue is chiefly made up of connective tissue, richly supplied with blood vessels and nerves. The connective tissue cells that usually enter into the formation of the pulp proper are classed as spindle cells, round cells, stellate cells and odontoblast. This last named substance is found to cover the pulp proper, making a membranous layer between the pulp and the dentine. From the surface of the odontoblast lying next to the dentine, there are prolongations extending into the dentine and are known as the fibers of home or dental fibrilla. These prolongations extend to the entire thickness of the dentine and enamel or cementum. These fibers branch and communicate with other fibers throughout the thickness of the dentine. The pulp of the tooth has a sensory function whereby it is able to recognize the

change of temperature and other causes of irritation. The true physiological activities of the pulp may be said to be that of the formation of dentine. The pulp tissue is supplied by one, two, or three arteries entering in at the apical foramen, passing down through the central portion of the pulp, giving off small branches during its course. These branches extend to the periphery and are the means of nutrition to the entire structure of the pulp. The arterial blood supply terminates in the odontoblast where the interchange takes place into the veins, and the venous circulation passing through the main portion of the pulp, makes its exit at the apical foramen.

When it is considered that the pulp is made up of embryonal connective tissue cells with an intercellular substance of a gelatinous structure, and is richly supplied with blood vessels, the walls of which are very thin, it can be better understood why hyperaemia and inflammation can be so easily established. What we mean by hyperaemia is an increase amount of blood to the part. This is one of the first recognized changes from a normal to an abnormal condition. It has been observed, however, that such tissue is the seat of which a hyperaemic condition may be continued for a considerable length of time without bringing about any perceptible change to the naked eye. The part may become oedematous or long continued hyperaemia may lead to hemorrhage, transudation or pigmentation, and sometimes atrophy may be produced through the pressure on the tissue cells. It is quite possible that none of these conditions may be brought about in the pulp, for it is most likely that the hyperaemic condition in the pulp usually terminates in inflammation, or the blood supply may return to a normal functional activity and the hyperaemia may disappear entirely.

It is ordinarily understood that the diseases that are established in the pulp of the tooth are most commonly brought about by certain forms of bacteria or their products. It is a well-recognized fact that the pathological changes induced in tooth structure is through some activity of bacteria. They first cause a disintegration of the enamel of the tooth, when they have made sufficient inroad into the enamel they then become a source of irritation to those prolongations of the odontoblast, which is a protoplasmic structure and is capable of becoming irritated. If this irritation is but slight it may be considerable time before a hyperaemic condition may be established in

the pulp. But the stimulating influences of the bacteria and their products that have reached the dentine may be of such a nature as to cause certain cells of the pulp tissue to revert to some of their original physiological activities, which we have previously said was that of forming dentine. Thus we have those well known secondary calcific deposits that are so frequently found in the diseased condition of the pulp. In teeth where we have this so-called secondary dentine it is fair to presume that the products of the bacteria that are acting in the dentine is not of an acid nature; if it were it would seem quite impossible for this secondary calcific deposit that was first established in the dentine of the tooth to be present.

It many times happens that the pulp of the tooth becomes irritated, as has already been stated, through the actions of some of the secretions of the bacteria which are formed in their growth and development while acting in the dentine, producing quite likely a substance that is easily absorbed by the cells of the odontoblast, and thereby setting up what is usually called a cell toxemia; thus bringing about a regenerative or degenerative change in the odontoblast layer, and, should the stimulating properties of this substance be of such a nature as to extend to all the cells of the odontoblast and they should revert to their original activity, the entire pulp might possibly become completely filled with secondary calcific deposits, a condition that most every operator has at some time or other observed; or it might be possible that only a part of these cells may take on this function of re-establishing the lime salts or inorganic substance. Only small areas in the odontoblast or adjacent pulp tissue cells may become calcified; thus establishing an irritating foci in the pulp, or it might be possible that this bacterial cell irritation may cause the formation of some substances that are usually spoken of in bacteriological language as anti-bodies or anti-toxines, which will arrest or stop the action of the bacteria in the dentine of the tooth, and thus establish what is sometimes called immunity to dental caries.

When hyperaemia of the pulp is established it most frequently progresses to that stage of disease known as inflammation. The treatment of such conditions are, as has previously been said, to be followed out upon lines depending on the cause and extent of the diseased condition that has already been established. And one of the most difficult things to determine is when the pulp can be pre-

served in the tooth in a healthy condition, and, if it is not in a healthy condition, we can be pretty sure that a condition will eventually be established that will make it necessary to destroy the vitality of the pulp, and substitute for it an artificial filling in its stead, which by clinical experience has proven when properly accomplished, a means of making the tooth a useful organ for carrying out certain physiological functions that is so necessary to animal economy.

The treatment of the pulp after the destruction of the tooth substance has reached well into the dentine should be that of removing by mechanical means the dentine that is inhabited by bacteria, and then by disinfecting agents treat it in a way that all micro-organisms remaining in the tissues will be destroyed. The agents used should be selected with reference to its irritating properties, and to what extent, if any, the pulp may be irritated by bacteria.

Many of the agents that are being used for the purpose of disinfecting cavities in tooth substance are sometimes the source of irritation to the pulp and have little effect upon bacteria as regards their destruction.

After the carious dentine has been removed and the cavity thoroughly disinfected and there is no direct exposure of the pulp, it is considered safe practice as soon as possible to fill the tooth, but, if there should be the appearance of a slight hyperaemic condition which is indicated by whether or not there has been any pain in the tooth, or whether or not the pulp is easily affected by a variation of temperature to heat or cold, if such condition exists it is well to make an application of some agent that will cause contraction of the arteries. These are called depressants. As we have previously said, the depressant effects of certain tissues or cells may be brought about by overstimulating the part and a condition of fatigue may be brought about; sometimes a so-called irritative substance will have a beneficial influence upon a tooth that for some time has been uncomfortable through a hyperaemic condition of the pulp. For instance, the volatile or ethereal oils have been used to considerable advantage in hyperaemic or inflamed pulps. Carbolic acid has had a wide range of uses in these conditions.

Just at this point it might be well to briefly discuss the essential oils because they are so extensively brought into use in Dental Materia Medica and Therapeutics. The so-called volatile

oil series are obtained from plants by a process of distillation. They are chiefly found in the fruit and flowering parts of plants, and they are quite universally distributed throughout the vegetable kingdom. They are extensively used in perfumes owing to their strong odor and capability of destroying nauseous stench. Their chemical composition is extremely variable. The chemical substance that is most universally found in these oils is a chemical constituent called terpenes. Some of these oils are composed entirely, while others are entirely void of terpenes. The terpenes are considered to be a hydro-carbon and possess in the majority of instances a chemical formula ($C_{10}H_{16}$). There are some twelve of these terpenes and are very variable in their chemical structure. Some of these oils contain a nitrogenous body that are classed among the cyanide group, while others contain sulphur bodies which give to them a pungent disagreeable odor.

These oils are generally clear, colorless fluids, while some have a green appearance, owing to the presence of the green coloring matter coming from the vegetable substance. Many of the plants from which these essential oils are taken are endowed with other therapeutic properties. The essential oils are but little used internally, and their use as therapeutic agents are almost entirely confined to their local application. Their use in dentistry has been confined very largely to that of antiseptic and disinfectant agents. Their greatest value probably lies more for the relief of pain in certain conditions of the living pulp of the tooth. Oil of cloves is among the older remedies for toothache, and has been extensively employed by both the profession and the laity. The action of oil of cloves on the tooth pulp brings about the relief of pain by first irritating the protoplasmic structure and then causing paralysis.

Questions:

Q. 1. Is it always advisable to cap the pulp after it has ached at intervals for two or three weeks:

Q. 2. Is calcific deposits located in the horn of the pulp an indication of a diseased condition?

Q. 3. At what age will secondary calcification of the pulp take place?

Q. 4. What are the common causes of secondary calcification of the pulp?

Q. 5. What is the best method of treating a slight or extensive calcified pulp?

(To be continued.)

OPERATIVE DENTISTRY.

BY R. B. TULLER, D. D. S.,

Clinical Professor of Operative Dentistry, Chicago College of Dental Surgery.

INSTRUMENTS AND INSTRUMENT NOMENCLATURE. CHAPTER I.

To go into this subject of instruments as thoroughly as the matter really demands would take more time and space than we can afford to give in this course of lessons; for in its completeness and entirety it is quite a book in itself.

But we must take up a portion of it, because to make oneself understood in teaching there must be adopted some clear and intelligent way of describing instruments and their several parts and proportions.

In writing of instruments, in speaking of them and in ordering them from dealers or makers, every practitioner feels the need of a method of describing them that can be understood in all shapes and dimensions by all concerned.

The key to the situation is in familiarizing oneself with the proper and scientific appellation given to every part—every crook and angle of an instrument as well as naming what it is for.

No one has taken this matter up and worked it out as carefully, as thoughtfully and scientifically as has Dr. G. V. Black, if anyone has given it any attention at all heretofore. There has been a crying need for such work; but the arduousness and the monotony of the task had no inducements for anyone but such an indefatigable worker as Dr. Black, and no one so thoroughly comprehended the situation as he. All the information I can give here comes from him, taken almost bodily from a pamphlet written by himself and published some five or six years ago. I know of no other source to get such information.

Take up cutting instruments—excavators, for instance—and each one is composed of a shaft (the handle), a shank and a blade. The shank connects the handle and the working point or blade; and it may be straight or have several crooks and angles, or, in some instances, a sort of cork-screw twist. The blade is the part carrying the cutting edge and may have crooks and turns of its own.

Pluggers have shanks like excavators varying in crooks and

turns, but having no blades the shank terminates in working points of differing forms and dimensions as required.

Names of operating instruments may be divided into *order* names and *sub-order* names; *class* names and *sub-class* names.

The order names designate what the instrument is for. In order names we have group of instruments called excavators, pluggers, separators, sealers, finishing instruments and accessories.

The *sub-order* names answer to "where or how used?" and is often prefixed to the order names, as *hand* plugger, *mallet* plugger, *push* sealer, *pull* sealer, etc.

Enamel trimmers is a sub-order of excavators.

Burs belong both to excavators and finishing instruments as sub-orders, thus: Cavity bur, finishing bur. The word bur is properly a class name—they have no order name.

A *class* name is applied to a group of the members of an order and describes the point or immediate working part, as hatchet or hoe describes blades of excavators. The working points of pluggers may be *convex* pluggers, *serrated* pluggers, *smooth* pluggers, etc.

A *sub-class* name describes the angles and curves of the shank, as *bayonet* plugger, *spiral* plugger, *contra angle* hatchet excavator, etc.

We habitually compound names. Sub-order names are prefixed to order names, as *mallet* plugger, *hand* plugger. Class names are prefixed to order names, as *hatchet* excavator, *spoon* excavator, *hoe* excavator, etc.

Sub-class names may be prefixed to either order or class names, or all these may be joined, as in *contra-angle-hatchet-excavator*. In all these the order name is last, indicating the use or purpose; the sub-order name prefixed indicates how or where used, while the class name is descriptive of the forms of the working points, and the sub-class name the form of angles and curves leading to the point. These specify the kind of instrument, but do not individualize the instruments of a group.

In rights and lefts we have among excavators two forms differentiated by *beveling* the edge of the blade right or left in one instance and turning the blade itself to the right or left in the other instance. Such instruments go, of course, in pairs. *Single plane* instruments are those with straight blades and are used to cut either right or left and hence are not in pairs.

Double plane instruments are those with blades curved to the right or left made to cut laterally and are always in pairs.

A *class name* describes the immediate working point of the instrument.

CLASS NAME OF EXCAVATORS.

Hatchet.—The shank has one or more angles or curves, the last length forming the blade, the edge of which is in the plane of the angle or angles.

Hoe.—The shank has one or more angles, the last length forming the blade, the edge of which is in a plane intersecting at right angles the plane of the angle or angles.

Spoons.—(Made in pairs.) They are first made in the form of hatchets and then the blades are curved one to the right and one to the left, and the cutting edge is ground to a semi-circle.

Discoids.—(Disc-like, circular.) The blade is circular in form, having a cutting edge all around except where shank joins. This blade is made at more or less of an angle with the shaft.

(Formerly this form was called a spoon, several forms being grouped under that name. Discoid blades are sometimes seen on rights and lefts, double plain instruments.)

Cleoids.—(Claw-like.) Sharp pointed blades in form of a claw, with cutting edges on two curved sides of the blade.

Chisels.—Straight blades with cutting edge formed by beveling from one side. The blade is usually straight, but may be slightly curved.

Binangle Chisel.—A chisel blade placed at a slight angle with the shaft approaching the hoe form. They are contra-angled.

Rotary cutting instruments not included in this list.

SUB-CLASS NAMES.

A *sub-class name* is one applied to and descriptive of the angles and curves of the shank of the instrument which leads to the blade or working point.

Mon-angle.—An instrument having one angle only leading to the working point as in pluggers, or forming the blades of excavators. Mon-angles form a large majority of excavators. In the greater angles only the shorter blades can be successfully used as mon-angles, for the reason that when the blade is long its inclination carries its working point laterally so far from the central line of the

shaft as to render the instrument liable to turn in the hand when using.

To remedy this defect, all cutting instruments in which the angle and length of blades will carry the cutting edge more than three millimeters from the line of central axis of the shaft should be contra-angled.

Contra-angle.—The shank of the instrument is first bent backward (from the direction of the cutting edge) and nearer the cutting edge. Another bend is made forward—this length forming the blade, the object being to form a long blade, the edge of which will be near the central line of the shaft.

Binangle Contra-Angle.—A contra-angle formed by two angles as described under contra-angle.

Triple Angle Contra-Angle.—In an instrument of an angle of about 45 degrees the binangle contra-angle will bring the cutting edge sufficiently near the central line of the shaft and at the same time carry the shank sufficiently out of the way to permit the use of the full length of the blade; but in instruments of a greater angle, a binangle would not do this, therefore a triple angle contra-angle must be made; this is done by first bending the shank backward as in the binangle contra-angle and then forming another angle which will bring the remainder of the shank parallel with the shaft; then passing forward a space of more or less length as may be required. Another bend is made forward by which the blade is formed. In this way the cutting edge of a long blade is brought sufficiently near the central line of the handle for effective work, and the shank is carried sufficiently out of the way to permit the full use of the length of the blade.

Long blades that require contra-angling are mostly for use in places where a long reach of blade is necessary. Curves occur among the rights and lefts—or double plant instruments—for which no distinctive names had developed when Dr. Black published his pamphlet. Those forms designated as spoons have a curve beginning at about one-third the length of the blade and gradually increasing to the cutting edge.

RECAPITULATION OF RULES FOR CONTRA-ANGLING.

1st. All blades the angle and length of which will bring the cutting edge more than 3 millimeters from the central line of the shaft should be contra-angled.

2d. All instruments with angles of 12 centigrades (about 45 degrees) or less when requiring contra-angles should be binangle contra-angles.

3d. All instruments of more than 12 centigrades, when requiring contra-angles, should be triple-angle-contra-angles.

4th. When the contra-angle is used the cutting edge of the instrument should be brought to within two millimeters of the central line of the shaft.

(To be continued.)

NOTES ON THE HISTORY OF THE DENTAL ART. INTRODUCTION.

By L. LEMERIE.

Translated from Proceedings of International Dental Congress.

1. Intends to show that dental art made no real progress until specialists engaged in it and made it a special branch of medicine.

2. Gives a chronological list of principal discoveries in branch, showing that there is nothing new under the sun and giving honor to whom honor is due.

The origin of the dental art, as that of the rest of medicine, is as ancient as that of the earth.

Man, placed on earth to suffer at first, made his medicines himself; not until much later were there men who made a specialty of this.

Egyptian papyri tell us that from remotest antiquity their physicians were engaged in caring for the teeth, but there are unfortunately not sufficient documents to comment on this era. Let us, therefore, pass on to the time of Hippocrates and the Roman age.

Hippocrates, who lived 470 B. C., wrote at length on the diseases of the teeth and their treatment; but passes over prosthetic art without a word—yet this branch was known to the Greeks for a long time previous.

The Roman physicians from (Para?) Celsus to Galen followed this example. Yet this branch was being practiced by jewelers and goldsmiths who often were merely slaves, remaining in hiding to make and put in place their dental apparatus, of which there are several specimens on exhibition.

It was but a step from that to therapeutics, especially at that epoch of empiricism (?). There, too, we, I think, have to seek the true beginning of specialization in the dental art, one name especially having come down to us out of the many, that of Casellins, who during the period of greatness of the Roman empire had opened a dental office on the Aventine Hill.

With the decay of the empire, the dental specialists seems to have disappeared.

During the long darkness of the middle ages, the sciences, as well as the arts, were preserved to us only in the cloisters where the monks fortunately nourished them.

During this same time, the Arabians attained the apogee of their civilization. Their physicians also occupied themselves with dental questions, notably the most celebrated of them Abulcasis, who lived in 1440. He spoke of teeth at greater length than his predecessors, but, like they, he did not mention operative and prosthetic dentistry; yet from him we learn that there existed in his time dental specialists, for he warns the public against surgeons of low estate, who were practicing the dental art and were chiefly employed in the manufacture of artificial teeth.

With the partial disappearance of Roman civilization and of Arabic power in Europe, everything had to be done over.

Very soon a new sort of physician, the seers (?) (sorcerers?) went through towns and countries treating man and beast.

Only in 1252 do we find a surgeon, of the school of Bologna, who again mentions in his writings teeth and their treatment; but he, like those before and after him, neglects or disdains to speak of dental technique. Strobelberger in his work, which appeared in 1630, was the first to advise consulting a specialist for extracting or treating teeth. The specialists of which he speaks were the surgeon-barbers, who, timidly enough at first, specialized by making artificial teeth and even in treating teeth by filling them.

We should name here a surgeon who seems to have made an exception to the rule followed among his confreres. Arculanus d'Arcoli, professor at Bologna, who (in 1450) was the first to recommend the use of gold leaf to fill teeth.

Following up our research we find that in 1572 and 1582 Ryff de Strasbourg (Ryff of Strasburg?) and Urbain Hemard were the first surgeons who wrote special works on the teeth, when as usual

they mentioned dental therapeutics and turned a cold shoulder on oper. and pro. dentistry.

Ambrose Paré, whose works assume encyclopedic proportions, also mentions teeth and their treatment. He also says a few words of prosthesis, but as of a secondary matter, and allows it to be understood that specialists (dentateurs) should be consulted in the matter.

But what specialists? Those who knew theories and science disdained to use them, and even expressed disdain for the modest practitioner.

This lack of consideration caused dentists of the sixteenth and seventeenth century to drift into perfect charlatanism.

The Pout Neuf (new bridge) was the especial place for these (?) exhibitions, from which several names have come down in the history of Paris with renown.

These first dentists gradually, from father to son, acquired a certain degree of science and manual skill. The wealthy public soon learned to know the cleverest and best informed among them, and one of them, named Carmeline, was quite in vogue at that time.

Fanchard, the first surgeon dentist worthy of the name, learned what he knew of operative and prosthetic dentistry from Carmeline and his contemporaries. In his writings he tells us that he regrets that this clever dentist did not write down all he knew professionally, and that he, Fanchard, would try to do what others had omitted.

His work was masterly. Fanchard wrote a complete work on the art of dentistry in 1727, comprising anatomy, pathology, therapeutics, as well as all of the operative and prosthetic technique.

Only from this time on, it may be said, that the art of dentistry made sensible progress.

We also note that from this time on similar works rapidly multiplied in France as well as elsewhere. These works were largely written by specialists. In drawing conclusions from this little historical resume it is a noticeable fact that dental specialists always appeared when a nation reached the climax of its civilization, and disappeared with its decline. We have seen this in the case of Romans and the Arabs and we shall see this again in the Renaissance in Europe.

If we owe to the old physicians, on the one hand, a certain amount of the theory of our art, such as anatomy, and therapeutics, on the other hand, we owe solely to the specialists, the surgeon-

dentists, all of the technique of operative dentistry, as well as of prosthesis.

Let us now examine the second part of this work and pass in review the deeds and inventions which are notable in our professional history.

To Hippocrates, 470 B. C., we owe the first elements of anatomy and dental therapeutics.

Celsus, 30 A. D., advised the filling of large cavities with lead before extraction, in order to give the tooth greater power of resistance.

Archigenus, 100 A. D., indicated tripanning of dead teeth as a means of curing them.

Pliny the older, 50 A. D., gave excellent advice on the hygiene of the mouth and the teeth, especially did he recommend the use of toothpicks.

Rhazes (850), a Persian physician, advised the application of leeches for the treatment of periostitis. He also tried to fasten loose teeth by the use of astringents.

Abulcasis, 1130, first commented on the evil of tartar on the teeth; he proposed its removal by means of four instruments invented by him.

Argelata, surgeon in Bologna in 1443, washed cavities in the teeth with aquafortis.

Platearius, physician in Pisa in 1470, recommended to see that during extraction the air should be kept pure. Might we not look on this as the first attempt at antisepsis, even though it be empirical enough?

Giovanna d'Arcoli, in 1450, first used gold leaf for filling teeth. A very interesting fact.

Ambroise Paré, in 1550, advised the use of (files?) "lime" for interstitial caries. He was also the first to speak of fillers for perforations of the roof of the mouth.

According to a Silesian legend the first gold crown was made in 1595.

To a Frenchman, Dupont, 1633, we owe the idea of reimplantation.

Cornelis Van Soolingen in 1650 used emery files ("limes d'éméri") to grind down the cutting edges of teeth. He also devised steel burrs in the shape of a ball for cleaning cavities.

Godefry Purmann of Breslau (1648-1721) was one of the first to make an impression of the mouth in wax for making artificial teeth.

We should also say in passing that France has been the first country where dentistry was recognized as a distinct branch of medicine. A first edict of May, 1699, regulated the profession by obliging dentists to obtain the title of expert after passing an examination.

Less than a century afterward the revolution by the decree of May, 1791, established the liberty of all professions. It was not until a century later, in 1892, that France re-established regulation; she was thus one of the last powers of Europe to make this decision.

Fanchard in 1727 opened a new era in the profession by publishing the first complete work on dentistry. He advised enlarging the dental canal with a square drill ("equarissoir?") and the breaking through into the pulp with a needle (!)

May we not look at this procedure as the first idea of a treatment of the canal and pulp?

Fanchard also tells us that an Italian Valsalva cured toothaches by cauterizing a certain point of the shell of the ear.

The transplantation and reimplantation was current at the time of Fanchard, he also tells us that a dentist from the country reimplanted teeth, which had been extracted for some time, previously making small incisions on the roots. This method has been announced to us a few years ago as a new one.

Fanchard describes at length the operative method of rapid straightening by dislocation as well as by rotation on the axis—methods which at this day we are trying to rediscover.

Fanchard seems to have been the first who made use of springs (distenders?) to keep utensils in the mouth.

The idea of suction seems to have been first announced by him.

Finally it is to him that we owe the idea of teeth in enamel (?).

Jourdan invented the tongue depressor about 1755.

Bourdet seems to have been the first (1771) to make mention of implantation by digging an artificial alveola into the maxillary. He foresaw the adhesive property of gold, without, however, of making use of it.

Bourdet also created antisepsis unwittingly by advising the

thrusting into the canal of a red-hot needle before placing the tooth post therein, and that "in order to prevent pus."

We know that the first idea of the mineral tooth came from Duchâtean, a pharmacist (1774); it was soon perfected by Dubois de Chemant, Fonzi, etc.

To Hunter (1771) belongs the credit of announcing that the total removal of the pulp to the apex of the root is a condition *sine qua non* for success in filling.

Philip Pfaff tells us in his writings in 1756 that on an exposed pulp he places a small piece of gold leaf in the form of an arch before filling the tooth; this is, I believe, the first idea of dressing (?) ("coiffage") of pulps which have been laid bare.

Serre, dentist of Vienna and Berlin (1759 to 1838) invented a conical devise to remove roots; this is what we know to-day as the "tire-fond."

Hirsch in 1796 advised percussion to aid in the diagnosis of a band tooth. He also made up a paste which would rapidly harden in the tooth; perhaps we may look upon this as the first step in cements.

Edward Hudson was the first (end of eighteenth century) to fill the root canals with gold.

John Spooner of Montreal in 1836 first recommended the use of an arsenical paste to devitalize the pulp. Harrison in 1835 discovered the same method independently.

The mallet for condensing the gold we owe to Merritt, 1838.

Levis Gilbert, a pastry maker, in 1842 discovered the air chamber for creating suction.

Gold in sponge or crystal form was first employed by Jackson in 1846.

Dwinelle in 1850 conceived the idea of building a wax dam around the teeth to keep them free from saliva while doing gold work.

In 1856 Taft invented the hot air syringe (?).

To Dr. Barnum (1864) we owe the use of the rubber dam.

In 1870 Morrison invented the dental engine.

In 1819 the English chemist Bell made an amalgam of small grains of silver and mercury, an idea taken up again in France by Tabeau in 1826.

In 1737 Murphy tried the use of glass as a filler.

Ler us not forget that humanity owes anesthesia in general to Horace Wells (1844).

Truemann in 1851 tried to introduce the use of gutta percha as a base for prosthetic construction utensils. At the same time Dr. Delabarre successfully built the first set of artificial teeth by its use.

Celluloid was first introduced by MacIntosh in 1859.

In 1805 Garrot first constructed a filling.

Maggiolo was the first to describe in France (1807) the method of taking a wax impression already described by Purmann a century previously.

A series of new appliances are due to him; notably the placing of a tube in the root to receive the post of a crown. He invented an artificial root, a kind of metal case which he fixed permanently in an alveola freshly deprived of its root, intended to hold a crown later. He is to be considered the forerunner of present prosthesis. We also owe him the idea of using rings, which he called lateral springs.

In 1808, Fonzi perfected the numeral (?) tooth by baking into the mass little platinum points.

The inclined plane used to straighten upper teeth placed in an-tversion (?) was invented by Catalau in 1825.

Fattori, in the *Revue Médicale* of 1825, published the method of excision of the nerve filament in the root. This, I believe, is the first time this is mentioned.

Finally Minch, 1854, Paris, made the first set of teeth of vul-canized rubber.

The writer makes an ardent plea for the study of the history of dentistry and the honoring of the memory of the notable men therein by various means, such as naming rooms and amphitheaters at the dental schools in their honor, etc.

He makes another and final plea for the donations of the instruments, etc., making up the exhibit at the exposition by their owners to societies, etc., so that they may be properly preserved and exhibited in proper places, such as museums, etc.



ORIGINAL CONTRIBUTIONS

ARMY DENTAL SURGEON AND HIS WORK IN THE PHILIPPINES.*

By G. D. Boak, D. D. S.

As Dr. C. W. Johnson has requested me to write a paper on above subject to be read by him before this professional body, I will try to give you some idea of the country, our work and results so far apparent. At the time of writing our corps number about twenty (20) in the Philippines, and we are scattered throughout the various brigades into which the division of the Philippines is divided. Upon our arrival in Manila Bay, June, 1901, the transport "Sheridan" dropped anchor, about a mile and a half from shore; then after the medical inspector and custom officials convinced themselves that everything was right, were allowed to disembark on a launch for the city of Manila. We entered the Pasig river and about a half a mile up were landed at the port's wharf, and obtained our first view of Manila and the adjacent territory, which was then under military law. As for Manila, perhaps a slight description may interest you. It is unlike any other city in this part of the world, so it is claimed, and belongs to a class peculiarly characteristic, Manila heading and ending the list. Its population number in the neighborhood of 300,000, which is a mixture of almost every nationality; streets narrow and crooked, and can go one better on Boston for confusing the individual, who has the sight-seeing mania. It is divided by the Pasig River into two parts, commonly called old and new Manila, which are connected by three bridges, Bridge of Spain, a toll bridge, and a new steel structure erected as a monument of American skill and progression.

New Manila is where most of the business is done, streets lined with small stores, with a few exceptions, which are literally what we call holes in the wall. Structures of wood seldom exceeding

*Read before the Southwestern Michigan Dental Society, April 7-8.

two stories in height; majority of the shops run by Chinese Philippines, East Indians, Turks and Spaniards, with here and there an American store run in opposition to the oriental trading companies which are becoming controlled gradually by Americans. Around the outskirts of the city you find the provincial style of house, namely, the Nipa shack, usually of two or three rooms, built on stilts, building material being the male bamboo and leaves of the nipa plant or shrub tied together for shingles. Old Manila is enclosed by a high stone wall and moat (commonly called walled city), built by the Spaniards about three hundred years ago, walls being filled with secret passages which run in all directions; and understand that they put their Philippino there for safe keeping. On the side of the walled city facing the bay runs a beautiful driveway called the "Fumeta," starts at Pasig River, runs up the beach to Ermita, the residence section of city since American occupancy; at Ermita end is small parking with two large band stands, the drive is lined with tropical trees and plants, making it an ideal drive in the evening, and where the sweltering population pour in the evenings to enjoy the ocean breeze and our famous military bands. On opposite side of walled city is another piece of parking which the Americans have beautified, and started a zoo in; facing this parking and walled city is the government commissary for post Manila, new military ice plant, coast artillery barracks, headquarters division P. I. 1st reserve hospital. This gives you some idea of the city except that the old-time horse cars are still in vogue. But instead of horses they use diminutive animals called ponies. But in America we would use them to swell the output of a glue or phosphate factory. The principal means of transit is by a small two-wheeled concern called a carromata pulled by a pony, which costs about twenty cents gold per hour. Well, after we went up town we stopped at a hotel (?) in the walled city called "The Universal," run by a German at that time, and about the only thing universal we could find was the way they starved us at \$2.50 gold per day. Then we reported our arrival to Adjutant General and Surgeon General, Division P. I., and next day we received our orders and were scattered throughout the various islands, with the exception of one, who was ordered to 1st reserved hospital for immediate duty, in conjunction now with Dr. R. T. Oliver, our able head in Division Philippines. I was ordered to the province Pampanga first, which

is about forty miles from Manila on Manila and Qugupan R. R., and where the finest sugar cane is raised. I arrived just in time for the rainy season, and in my five months' stay there had the experience of going through earthquake, typhoon and flood. Rain! We in the States have never seen a real rain as compared with these, where it rains straight for a month or two at a time. I certainly thought I was going to live to see the deluge reproduced. About the time I got my office fixed up to my satisfaction in above described Nipa shack or hut of four rooms, a three weeks' rain started in and ended in a typhoon. I had to walk to post headquarters for my meals, and while there eating supper the typhoon started; consequently we stayed up all night and saw our kitchen blow away. Next morning bright and early I started for my hut through a small river running down the street. The sight of devastation that met my gaze quickened my steps considerably, for the better part of my room was nowhere to be seen, and afterward found, all floatable articles were performing aquatic feats in large pools of water. But with hard work and the assistance of my hospital corps man and muchacho (boy) managed to get the office in shape by two p. m. So we did all necessary work in the rain until the quartermaster could get a native to fix my roof. After a pleasant stay in Pampanga province I was "hiked" to Zambales province for three months to relieve the suffering in troops stationed there. This trip is made by transport, through China sea to Zambales coast, and we were landed at San Felipe in big surf with a bank running almost perpendicular, and were carried ashore on the backs of natives. This province is principally covered with mountains which come down within a mile, some places two, of sea coast, leaving the flat stretch for the industrious (?) Zambalian to cultivate. He is the nearest approach to the original inhabitant of this island I have ever seen. As a rule lazy, caring only for hunting, gambling and cock-fighting, depending on his bow and arrow to feed him. After my work was about half completed, the troops were partly withdrawn from the province, and I was ordered to Tarlac province, my present station. I will mention one little incident while in San Felipe that might amuse you. The major commanding the batallion had heard that Zambales province had some man-eating crocodiles. But we were all sceptical, as we could never find the river they were supposed to be in. So he teased the president of the town a great deal about

the crocodiles. About a week before leaving the president got mad and said he would get one if he lost several men trying. Sure enough about three days after we heard a noise outside and a procession of natives came in with one measuring six feet nine inches, all bound up with a trailing vine, and presented it to the senior commandant with the compliments of the president; so we had the pleasure of a crocodile hunt in the yard.

OUR RECEPTION BY THE ARMY.

Speaking from my experience, which I have no doubt has been the experience of the others, I was received with open arms, so to speak. I have received courteous attention on the same footing as the contract surgeon, of course, and my shoulder straps the same respect that is accorded any officer of equal rank. As one officer told me, "Your profession is a necessary evil we will be unable to dispense with in a little while. Of course it all depends upon your corps however."

MODE OF LIVING.

Same as the other officers being so unfortunate (?) as to be single, I have always been asked so far to mess with the post staff, consisting of the commanding officer, his adjutant, commissary, quartermaster and surgeon. The mess costing about thirty dollars gold per month. Where we are stationed within easy access of Manila, we received fresh beef and ice from there twice to three times a week. Of course, most of our food comes from the commissary department, with the exception of such native products as we can use. Beans, lettuce, shrimps, fish, eggs and chickens, the vegetables, along with the shrimps and fish, are tabooed at present owing to the cholera.

Our hours of work are from 9 a. m. to 4 p. m. for officers and enlisted men (A. R. par. 1584). Outfits consist of five cases as follows: No. 1, S. S. white, gold medal, portable chair; No. 2, S. S. white engine, which is packed in case about the size of dress suit case; No. 3, instrument case or chest; No. 1, for instruments; No. 4, medicine chest; No. 2, for medicines, sterilizer, etc.; No. 5, medical department field desk, with all necessary papers, etc., for work, besides a small library, consisting of Burchard's pathology, therapeutics and pharmacology, American text-book of Operative Dentistry, Marshall's oral surgery. Then the surgeon general allows us three

dental journals a month, *Cosmos*, *International Dental Journal* and *Dental Review*; thus giving us the latest theories advanced by our professional brethren. The corps is doing a great work for the army and the advancement of the profession. Upon examination of the enlisted men in regular army at least sixty per cent that have come under my care have never paid any attention to their teeth. If they became bad they had them extracted. So the first thing is to try and overcome their prejudice against dental treatment, and by so doing not only benefit the soldier, but upon return to civil life become the patient of the civil practitioner. Thus they come to realize the advantages gained from careful attention and cleanliness of their mouths. For with the army we have a constant change from military to civil life. And if we can get only ten per cent of that class of men educated up to the necessity of proper dental treatment we will have made another stride in the education of the masses. That the army recognized that we are doing a good work is shown by an abstract from a letter recently sent each dental surgeon through Dr. R. T. Oliver, by order of chief surgeon Div. P. I. (It being a known fact that injection of pyogenic bacteria from unhealthy mouths and teeth produce various forms of gastro-intestinal disturbances, it is recommended that dental surgeons make close investigations and report to this office any cases of diarrhoea and dysentery, whose etiology points to infection from diseased oral cavities, giving the detailed account of case hospital treatment and an account of dental treatment received, with direct or indirect results obtained therefrom.) I find my work interesting as well as instructive, as one sees many strange and exceptional cases not found in a life-time of ordinary practice. We are supplied with operating outfits only and an assistant from the army hospital corps. All men needing prosthetic work are transferred by authority of chief surgeon to the base hospitals, of which there are two: 1st, Reserved Hospital, Manila, P. I., for Dept. of the North Philippines; the other at Cebu, Cebu Island, for Dept. South Philippines, each base station being equipped with a most complete mechanical laboratory, besides an operating office.

While on tours of duty from one place to another, we notify the commanding officer of each station one week in advance of probable date of our arrival at such station, thereby giving time for the preparation of an operating room and suitable quarters befitting our

rank. Upon our arrival at stations we report to commanding officer for duty, register our names, dates of arrival, number, date, source of order, and probable date of departure in a book kept at each post headquarters for that purpose, and request that all officers commanding companies or detachments at said stations send members of their command and who need dental treatment to the operating room of the dental surgeon at such an hour as may be determined upon, in command of a non-commissioned officer, with a list of the names of men in squad.

His post social duties consist of calling upon and paying his official respects to the commanding officer and afterward upon the surgeon of the post, making arrangements for the attachments of his assistant to the hospital corps stationed there (par. 1581 A. R.).

We are also instructed to request a list of all men at the station who were affected with syphilis, giving name, rank and company, thereby minimizing the risk of transmitting that disease to healthy patients; for by having a previous knowledge of these cases necessary precautions can be observed by operating upon them with instruments set apart for that purpose, and at times other than that set aside for healthy patients. (Extract circular headquarters, Division of Philippines, Chief Surgeon's Office, March 1st, 1902, Manila, P. I.)

CLIMATIC EFFECTS UPON THE TEETH.

I can only speak from personal observation, which may differ from the other members of our corps. While the weather is by no means as hot as it is at times during the summer in the States, the average temperature for the islands during the past year being about 89 degrees F., still it is a continual heat without the invigorating change of seasons we have in the States, which gradually saps the vitality and enervates the system, producing that feeling of lassitude which is characteristic of tropical races; this enervation produces a thinning of the blood with a corresponding lessening of the resisting powers, due to the lower vitality of the individual, and especially for those who have lived previously in cold or temperate climates. That caries progress more rapidly in this climate and is more susceptible there seems to be little doubt among the profession in the islands.

And I should attribute it to the following causes, all things being equal:

1st, lowering of the vitality by a lessening of the resisting powers; 2nd, acidity of the oral secretions.

I have tested the oral secretions of about 800 patients, and of these the majority are men who had come in with the first regular regiments and had served here over two years. The test was conducted with litmus paper, not only of the saliva as a combination of the secretions of the different glands, but I tested the secretions of the parotid, submaxillary, sublingual and racemose glands as they issued from the ducts leading onto one oral cavity. With the result that in a few records of the 800 cases 40 per cent showed marked acid reaction; 20 per cent slight acid reaction; 20 per cent neutral or slightly alkaline; 10 per cent markedly alkaline when the reaction normally should be alkaline; which seems to indicate that this at least is a predisposing cause.

As to our disadvantages, I will speak of one instance to illustrate. The dental surgeon ordered into a battalion of infantry for a month or so many soldiers, presenting themselves with caries complicated with necrosis of the teeth, superior molars or bicuspidis missing on one side, giving only the opposite side for proper mastication, it was found upon examination that on this side we have either a six-year molar or a second bicuspid, or, in fact, both as stated above. And that if we start to treat we will not be able to get through in proper condition to fill before going to our next station as ordered. The question is, shall we extract these teeth? If so, we defeat the object of our appointment. And if we start to treat them and find that they are not in a proper condition to fill, upon being ordered away you place a dressing in the roots and seal up with gutta percha or cement, and trust to Providence that no trouble will ensue. But before patient can have it attended to, being stationed at an inaccessible post, the tooth either begins to give trouble or the filling washes or wears out, with the result that the soldier blames the dental surgeon because the tooth has never given trouble before. Although we can see the minute it comes under our observation that the roots are putrescent and continually weeping pus. And if they should become stopped would cause to become abscessed. Then, as stated before, the posts are often in places inaccessible, especially in the rainy season, and a trip to a dental surgeon, even though stationed near, often entails days away from post and travel

over impassable roads and rivers. So you see that it is a great disadvantage, as we found more work than we expected, and the large number awaiting treatment, we had to move around more and spend less time in one post than we do now, for the army has been decreased considerably, and we begin to understand how to handle our work better. We do not get to see the result of our work as the civil practitioner does. This is also a disadvantage which will be corrected in time by having a dental surgeon to each regiment. And as we all make mistakes, or, I should say, "errors in judgment," sound better in our professional ears, why at present we have little chance to correct them. Then, too, a man may put in a number of fillings for a soldier and send for him in moving to find he has been ordered away on special duty (or ahike) or on guard. And in many instances if the first two we never see the man again, as we are gone from the post when he returns to his command. So you see another disadvantage over here that may cause our civil brother to often criticise our work when he does not realize the condition a man is under or circumstances surrounding the case. Many of the men were discharged with the work half completed, and, upon being ordered into Manila to be sent home, left at once. Upon sending for them on day of engagement we found them to be on their way to the States. I only speak of these instances to let you know some reasons for conditions, you, as civil practitioners, may not understand, and how the military practice differs from civil. You must remember that in the former your patients come of their own accord, and in the latter we examine the men as a body and do the required work; as Uncle Sam has no use for men in his service (active) who are in any way incapacitated for duty. I think the army that has served in the islands not only realize the good that has been done, but that remains to be done in the future. I see in the International Dental Journal, June number, that Senate bills 5420 and 5419, introduced by Senator Pettus, house bills 13968 and 13995 by Mr. Brownlow (Tenn.) during last session of congress for the reorganization of the dental corps on a commissioned basis instead of a contract corps, for army and corps, the navy has been approved by both the surgeon general of the army as well as navy. It shows that it is realized that it is a necessity and should be put upon a commissioned basis instead of a contract corps, with dental surgeons enough, not to exceed one to every thousand men. If this or a

similar bill passes, the dental profession will have scored a point second to none in its history, as we will have proved by our work and labor that the dental surgeon is a necessity for the proper treatment of the oral cavity of the soldier, on which depends to a great extent his health and physical conditions, which has obtained for him the compliments of the allied armies in China as being the first body of troops there. Not only that, but to put the present corps of dental surgeons on a commissioned basis costs the government \$1,460 less per year.

PRESENT STATUS.

Three examining and supervising D. S., \$2,520.....	\$7,560
Twenty-seven contract dental surgeons, \$1,800.....	48,600

Per year pay, total	\$56,160
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The following commissioned basis:

Three majors, \$2,500	\$ 7,500
Ten captains, \$2,000..	20,000
Seventeen lieutenants	27,200

\$54,700

Making the cost less per year as stated, \$1,460.

OUR BOARD OF DENTAL EXAMINERS.

When one realizes the amount of work accomplished and the ingenuity with which it has been carried out to the minutest details, they can only say that the board has fulfilled every expectation the profession could have desired. It means no small matter to outfit thirty, or, I should say, twenty-seven, men, in the short time it was accomplished besides conducting the examination of candidates for appointment, and upon reaching our last post to find every instrument as needed in its proper compartment. If I have interested you any in these remarks I feel that I have accomplished something toward gaining your moral and professional support toward the army dental corps in its efforts to advance our profession and make its mark before the world as the first recognized dental corps in the world's armies.

PROPHYLACTIC ITEMS.

BY R. B. TULLER, D. D. S.

(Items began in July number.)

Don't!

Don't what?

Don't be a lobster—if you can help it.

There are some things to Don't as well as some things to Do.

Don't be a clam!

Don't be a clam that shuts tight when you should open and tell your patients a lot of things they should know.

There are too many teeth being extracted.

Not so many now as there used to be by regular practitioners, but too many.

Fortunes have been made by making a business of extracting teeth.

Palatial residences have been built through the groans, shrieks and lamentations of women and children.

And even of strong men.

It is a crying shame!

There are few dentists to-day who do not know how to soothe an aching tooth.

And treat it so that it may be preserved to many years of usefulness.

But the people themselves are to blame.

There are some—a good many—intelligent people who have an idea that teeth should be preserved.

But there is still a larger class who let their teeth go until trouble overtakes them, and then run to the extractor.

Sometimes to the blacksmith.

It is strange how readily a lot of humanity will part with their teeth.

Some seem *anxious* to get rid of them, as though it was a matter of course that they must ultimately be lost—

And the sooner they get them out of their mouths and false ones in the sooner they will be at ease in the matter.

The trouble and inconvenience and insufficiency of mastication does not seem to have a thought with some people until it is impossible to repair the damage.

Store teeth will do, and they don't ache.

Plenty of people will lose a few teeth and then look after the remaining ones pretty well.

It is the deformities that come from the loss of one tooth, two or three teeth, that I want to talk about.

When I say deformities I mean nothing less.

Any practitioner of a few years has seen cases of mal-occlusion that amounts to nothing less than deformity or disfigurement.

It does not follow in every case of the loss of a few teeth, but it does in many cases.

Don't you remember Mrs. So and So, who said, "Doctor, what is the matter with my upper front teeth? They used to be very perfect in alignment; now they are horribly irregular."

And when you examined you found the lower incisors were biting abnormally against the palatal shoulders or inclined planes of the upper ones, forcing some of them forward out of line.

You have found the lower teeth in some cases coming clear up to the gums behind the upper teeth.

Or with some people whose under jaw protruded you have seen the upper teeth entirely hidden by the lower teeth coming up outside.

The disfigurement is sometimes grotesque and you are forcibly reminded of bulldog protrusion.

These things come very often indeed from having had extractions of one or more teeth years before.

They are disfigurements that many wish to overcome.

But when we come to study the problem of remedy we find difficulties that require extensive and expensive prosthetic appliances very often.

Such mal-occlusion often calls for the highest skill and ingenuity to open the bite and not be called upon to build up almost every tooth in the head.

It often comes to the point where no remedy is possible, except by the extracting of other teeth, and often sound ones.

Sometimes it is of such a nature that it necessitates the clearing of one jaw or the other of their remaining natural teeth and inserting a full denture.

If you have been long in practice you have had some of these mal-occlusions grow right before you.

Possibly you took out the teeth years ago that caused it, but more likely it was the "other fellow."

Anyway, whether it was your work or not, it is possible that if you had comprehended just what was going on in the succeeding years, gradually, slowly changing, you could have prevented any marked change and averted the growing disfigurement.

It often happens that one single tooth is pushed out of place, and badly so.

It looks easy to remedy that defect, but it is often impossible to remedy it by simply substituting an artificial tooth for the offending one, since the mal-occlusion prevents.

Nothing can be done but to readjust the bite involving many teeth.

These disfigurements annoy women more than men usually, for it often spoils an otherwise handsome or fair-looking face.

But rarely do they trace the cause to that unfortunate tooth extraction.

And rarely does any one look ahead to what the results of that loss of one or two teeth may be twenty years away. It is up to you, Mr. Dentist, to tell them.

Why, a person should be as reluctant to lose a tooth as to lose a finger.

They won't notice the loss of the tooth so much at first, but we have just gone over what happens often in twenty years.

In the matter of mastication, one of the most important functions in the human economy, the deficient condition increases in a sort of geometrical or arithmetical progression as the teeth are lost.

One tooth isn't much, but two are. Three are mucher and four are much mucher, and so on. (Excuse my rhetoric.)

So don't be a clam when the importance of this matter is so great.

Open your shell—mouth, I mean—and talk. Talk to the father and the mother and the child and to any one and every one that don't value their teeth as they should.

The good Lord didn't exercise any more omnipotent skill and wisdom in making any other part of our economies than He bestowed upon a tooth.

It was made for a purpose—a good purpose, an important purpose, a wise purpose—and every one should remain in the jaw until nature—or pyorrhoea—sheds them.

And knock pyorrhoea out—or prevent it.

Preach the sermon of don't—don't extract.

Out in the country some fellows will ride around and look up people who are ready and willing to have teeth “pulled.”

And because the fellow won't be around again soon (“mebby”) they conclude to have several good ones taken out that are *liable* to ache—some time.

Or, since the fellow will put in store teeth for \$8.00 (or \$5.00 if he can't get \$8.00), and charge nothing for extracting, they will submit to clearing the mouth in many cases.

“What's a tooth, anyway? If it hurts, yank 'er out.”

What's a hobnail in your boot? If it gets sharp, bent and catching into things, yank 'er out.

One is about as important as the other—with some folks.

Say, I know a dentist who, long years ago, early in his practice, took out thirty-two teeth from one mouth in one sitting. Wow!

He did it under protest, but was sorry he didn't positively refuse before he was fairly begun.

The patient was a young married woman, possibly 28 years old, wife of a farmer.

Some of the teeth were decayed, some aching. All were susceptible to repair and salvation.

The farmer came with his wife to make the bargain.

The dentist insisted that anyway those should be saved which were not aching.

The farmer said: “How much to fix 'em up, Doc?”

I said—I mean the dentist said—he couldn't see his way out for less than \$50 or \$60, as there were a number of the front teeth decayed and that meant gold of course.

“How much f'r the plates, Doc?”

“Twenty-five dollars, but——”

“And you'll do the pullin'?”

“O, I ought to get \$10 at least for taking out thirty-two teeth; but that should never——”

“Come now,” said the farmer. “You ain't a-goin' to git no \$50 or \$60 out ov me—n'r forty neither. Not much! You go ahead

and pull them teeth, all on 'em, and make two plates and you'll git y'r twenty-five dollars and no more. An' I can git it done over to C—ville f'r less'n that."

"But," protested the young dentist, "a lot of those teeth are not decayed at all. I can't take them out."

"Well, they will decay an' it'll be \$50 f'r fillin' now and another forty or fifty later, and no set of teeth aint worth no hundred dollars. No, sir!"

The young wife fell in and repeated, "No, siree. No set of teeth is worth \$100 and I'd begrude half of that."

She said she had the grit necessary to take them all out.

The dentist wanted the \$25 pretty badly, but he declined to "pull" the teeth—all of them. He tried to fix it up on a partial plate deal.

"No, you don't! Might just as well clean out the hull dum shootin' match while your at it and have done with it."

I still—I mean the dentist still—hesitated and the farmer began to get impatient.

"Come, now, git to work," he said, "or I'll go across the hall to that other dentist."

That other dentist didn't need the \$25 as much as this dentist did, and so with many a twinge of conscience—one, at least, with each tooth—the slaughter began.

A halt and an argument when the decayed ones were all gone. The dentist thought the woman would be ready to cry quits by that time.

"No, you don't," said the farmer. "You keep right on till you git em all. Don't want no second job. Lindy can stan' it, you bet! Say, Doc, she can do more work 'round the farm than a hired man. Go ahead."

Echo from wife: "Go ahead and git it done with."

At last the 32 teeth were all out. That dentist was nearly sick. Teeth to the right of him! Teeth to the left of him! None in front of him—nothing but a gory gap.

And the gory gap spoke—after discharging some gore.

"There! **by** ding! Them deeth won't deever have to be bulled again!"

"No, you bet!" said the husband, "them pesky things won't never have to be pulled no more." And with a grin of satisfaction he added, "And they won't be no more skirmishin' around nights by

me heatin' a flatiron an' huntin' up the camfire bottle. Say, Melin, when mine gits to troublin' me like yourn did I'll come down and have mine all out. But *mine* are putty good teeth."

Two people put in a pretty bad night that night—the dentist, who was haunted by nightmare and R. E. Morse, and the wife of the farmer who nearly bled to death.

One person slept like a log until roused to get out and hitch up and go four miles for the doctor.

He had saved money on the job of dentistry—and it was a job—j-o-b—but when he settled the doctor's bill for about a month's attendance on his wife he began to see there wasn't so much in it. "But them gol dinged teeth don't have to be pulled no more. That's done f'r good."

I—that is, the dentist—has prayed for forgiveness many a time. But the horrible memory sticks and R. E. Morse never lets up. Young man—young practitioner, beware of R. E. Morse!

O, I don't mean the farmer; he wasn't haunted except with the cost. His name was Timothy Tightwad. "But them gol dinged teeth," etc.

This story has a moral—a prophylactic moral: DON'T.

Don't be a lobster!

Don't be a clam!

DON'T BE A VANDAL!

[TO BE CONTINUED.]



A FRACTURE OF THE LOWER JAW DUE TO EXTRACTION OF A TOOTH FOLLOWED BY PYAEMIA AND EXSECTION OF A PART OF THE LOWER JAW.

By J. A. Hofheimer, M. D., New York.

Fracture of the jaw due to tooth extraction is not uncommon occurrence, and I have frequently met with it when in dispensary practice. These patients readily recovered. But generally pyaemic infection, with multiple abscesses as a sequela to such an ordinary event as extracting a tooth, is of sufficiently rare occurrence to make a case notable.

Coupled with this condition there are also present a gradually increasing necrosis of the lower jaw posteriorly to the point of fracture, necessitating the removal of the ascending ramus, including the condyle; this was done by the intrabuccal method, thus avoiding a large, unseemly cicatrix on the face, and leaving but a slight deformity. The case in details is as follows:

Joseph H., aged nine years, of good family history, except paternal grandmother had phthisis. Patient had measles when six years old, but no other severe illness. His health at the time of injury was apparently normal.

On April 23, 1902, having complained of a severe toothache the preceding night, he was taken to the office of a so-called "painless" dental company to have the offending molar extracted. The dentist removed the first molar from the right side of the lower jaw, but in doing so used his energies in such a way as to cause a stellate fracture of the jaw.

Evidently the dentist did not notice this, and the patient was permitted to return home, where in a short time the boy's face became greatly swollen and very painful. These symptoms of inflammation increased so rapidly that the following day the family physician was consulted. Owing to the tumefaction and pain of the soft parts and the inability of the patient to open his mouth to any great extent, the doctor at this time was unable to diagnosticate the fracture, but he did find that an abscess had formed about the bone, and that there was a slight discharge of pus from the tooth socket, which was nearly closed over by the swollen tissues. He incised along the gum with a bistoury and evacuated considerable pus, which gave temporary relief; and in a few days the subsidence of the swelling permitted him to diagnosticate the fracture.

The patient, however, continued to have a temperature of from 101° F., which kept rising steadily. He became very anaemic and complained of pains in the right leg, especially about the groin. Frequent chills, followed by rising temperature and clammy sweats, were noticed.

On May 7th, two weeks after the injury, the writer first saw the patient with Dr. J. R. Healy. The child's temperature was now at times 104° F., pulse weak and thready; there were anorexia, albuminous urine, skin of a wax yellowish-white appearance, sordes on lips and tongue, and the right corner of his mouth was the seat of an ulcerative process similar to that found in oma, and due to the irritation of the vile pus which was constantly dribbling from the alveolar abscess over this part. The right side of the face was greatly swollen, and crepitation was made out along the point of fracture. The patient's right leg lay helpless in the bed, and he screamed with agony at the slightest touch of it. The entire limb from hip to knee presented an elongated oval contour and well-marked fluctuation, denoting that the entire upper part of the leg was involved in a suppurative process. A diagnosis of pyaemia was made, and despite the weakness of the patient, an immediate operation was decided upon as being the lesser evil. Under chloroform anesthesia, I made an incision about five inches in length on the outer and upper portion of the thigh, just below the trochanter, and evacuated nearly a quart of thin, foul-smelling pus; the cavity was thoroughly washed out and the hand introduced. The femur was found to be bare, and all the intermuscular tissues were dissected apart and bathed in this pus from the gluteal region to the knee. A noticeable peculiarity was the scant flow of blood, both from the incision and after the pus was evacuated; and also the appearance of the muscular structures, which had assumed a bluish hue similar to fish flesh. This was undoubtedly due to the pronounced sepsis and leucocythaemia present, and to circulatory interference.

To favor drainage of this enormous abscess a counter opening was made just above the external condyle of the femur, and a tube introduced to drain the leg longitudinally; two other tubes were inserted in the large wound, one passing posteriorly to the femur and the other draining the gluteal region. It took several weeks to heal this limb, as it continued to discharge great quantities of

thin, ichorous pus, excoriating the skin and necessitating daily dressings.

The mouth wound was discharging freely, and it was thought best not to resort to any operative measures here at this time, trusting that as health returned the diseased bone would exfoliate and healthy tissues form. The mouth was washed out several times daily with antiseptic solutions and syringed with hydrogen peroxid.

After the operation on the right leg the temperature decreased, but did not go below 101° F., and ten days later he complained of a pain in the right side and shoulder. A small swelling was found under the lower angle of the scapula, which gave evidence of fluid formation. Under cocain analgesia this was incised for about three inches, and six ounces of pus escaped. Thus purulent secretion had formed up under the scapula and had burrowed in a downward and forward direction along the ribs of the right side.

Even after this operation our patient's temperature and fretfulness warned us that all was not going well. Strong, bland nourishment was pushed to its fullest extent, and such tonics as could be borne were given assiduously. His color was improving, and the wounds began to assume a healthier aspect, the discharges becoming more laudable.

On June 8th, one month after initial operation, the left gluteal region was found swollen and tender. After waiting a few days and noticing no improvement, an incision was made into this mass and eight ounces of pus came away. This did not have the foul odor present at former operations, and was healthier in character; the flesh, also, had a neutral appearance and bled freely. This wound healed quickly—in about ten days—before either of the earlier ones on the right side, thus indicating the diminished potency of the infection and the improved condition of the patient.

After this operation the temperature speedily became normal, and convalescence progressed satisfactorily. The ulcer at the corner of the mouth also commenced to heal.

During all this troublous period the jaw injury was carefully watched. Ultimately, as was expected, spiculae of bone exfoliated and were readily removed. The two teeth posterior to the seat of fracture became loose as the alveolar structure dissolved in the necrotic process, and were taken out.

Finally a small inflamed area was noticed below the descending ramus. This pointed in a couple of days, and an operation was decided on. In this instance I had determined to remove all the diseased bone, while endeavoring to leave as small a scar and deformity as possible.

Under full anesthesia a small incision was made into the inflamed part and about a drachm of pus escaped. The finger introduced into the wound could detect that the bone was denuded of periosteum almost to its articular surface on the outer side. The remainder of the periosteum was detached, with the attached muscular structures, and a similar procedure was accomplished on the inner side of the bone through the mouth by splitting the gum in the median line. Several spiculae of loose bone was removed, and the point was cut off with bone-cutting forceps. This permitted the ascending ramus to be rocked backward and downward on the angle of jaw. In this position the coronoid process caught under the zygoma and was held fast, but was readily liberated when the coronoid was cut off with forceps. It was then a simple procedure to lift the largest remnant of diseased bone out of its bed by drawing the distal end upward and forward. The space left vacant by the removal of the originally fractured bone gave quite a space to perform rotation in. The hemorrhage was slight and readily controlled. The bone was necrosed and of foul odor, the cancellous tissue in its interior being entirely broken down.

The result has been very satisfactory, there being but a slight deformity, which is gradually lessening, and a new bony formation is already developing; and in time we may hope that a false plate with teeth will restore the slight loss of normal contour and full function of mastication.

The health of the boy is now excellent. He walks with a slight limp, owing to an atrophy of some of the anterior muscles of the right thigh; but under massage and calisthenics this is steadily improving.—N. Y. Medical Journal.



TREATMENT OF CHRONIC SUPPURATION OF THE MAXILLARY SINUS BY RESECTION OF THE NASAL WALL OF THE SINUS.

Claoue, R. *La Semaine Medicale*, 22d year, No. 42, p. 343, Oct. 15, 1902.

The unsatisfactory results following the operation of opening the sinus and draining through the canine fossa, as well as the more radical procedure of opening the front wall of the sinus and thoroughly curetting, have led the writer to study some more efficient and practical means. This he has found in the removal of a considerable portion of the nasal wall of the maxillary sinus. This operation meets the indications in antral involvement, furnishing a large opening for cleaning out the sinus and for drainage. It admits of perfect ventilation of the sinus and prevents the accumulation of secretions and pus. The drainage through the mouth by the removal of the canine tooth and the opening of the antrum through the alveolar process is an operation which is easily carried out, but the drainage is not sufficient and is apt to be intermittent. The writer's preference is for the nasal route.

This operation is begun by the removal of a portion of the inferior turbinate bone. Later the wall of the sinus is removed, and then it is cleaned and packed. The inferior portion of the turbinate can be removed by a pair of strong scissors inserted through the inferior nares. The line of incision is shown in Fig. 1.

After the resection of the turbinate a free opening is made into the sinus by removing a considerable portion of its wall by a circular trephine, or an instrument devised by von Mikulicz, or the Kraus-Friedlander trocar.

ONE WAY OF SECURING A CORRECT ARTICULATION.

A few months ago a lady who had worn full upper and lower dentures for eighteen years wished me to make her some new ones which would more fully meet her needs. Realizing that the case was going to be hard one on account of the entire absence of the alveolar ridge in the lower jaw, I promised to do the best I could for her.

Impressions were taken and trial plates made and then my troubles began. After repeated attempts to obtain a correct relation

of the jaws the plates were made and given a trial. The lower seemed to do everything but stay where it should and another was made to take its place. This one did a little better, but was not entirely satisfactory, having a disposition to slide forward. Discouraged but not dismayed, the following plan was decided upon:

Gum sections having been used and not wishing to disturb the well made joints I removed with file and saw the entire lower portion of the plate. It was then roughened so that impression material would readily adhere to it and a sufficient amount prepared and placed upon it. In this condition the plates were placed in the mouth and the lady asked to close her jaws upon them. The compound was then cooled as quickly as possible and the plate removed. After thoroughly chilling the impression material it was trimmed and finished as if it were a completed case. Thoroughly chilling it again it was placed in the mouth and the lady given some crackers to eat. Everything seemed to be working satisfactorily and the case was then flaked and a new bottom vulcanized upon it. This, up to the present, has been very satisfactory and the method may be taken and used upon its merits.

J. M. Thompson.





THE STATE SOCIETY.

The State Society meeting this year is to be held at Bloomington, May 12th, 13th and 14th.

As the importance of these state meetings grow with the years, this should and probably will be one of the most important ever held. Aside from the effort that has been made through the work of the program committee to supply papers and clinics that seemingly teem with more than usual interest, there is an unusual importance attached to this meeting on account of the recent enactment of a new dental law, which, among other things, provides that this society shall name three out of five of the State Board of Dental Examiners, which are to be appointed by the governor. This is no doubt a wise provision, for no man or body of men at all concerned in these appointments could better make the selection of the controlling power of the board than the State Society. A board is worthless or more than worthless unless it be composed of men who first of all understand their duty and will be just and conscientious in the performance of it. One of the most important things of this year's session of the society will be to select these three men for the State Board.

When one comes right down to construing the meaning of the law, section by section, and in every detail, as a board must do, it needs men of judgment and wisdom and at this time especially in the first operations of it when precedents will be established. It wants men who will be exceedingly careful and who will weigh well every feature. A new law, over-zealously framed and enforced, might have the elements of its own undoing. Let us have men who will scrape off the barnacles if possible, but who will not scrape holes in the ship.

It is to be hoped, therefore, that the State Society will choose men for their broad understanding, wise discretion and conservative judgment.

Every member of the society should feel it his duty to attend this meeting.

R. B. T.

BIBLIOGRAPHICAL.

ANAESTHESIA AND ANAESTHETICS—General and Local for Practitioners and Students of Medicine and Dentistry. By Joseph M. Patton, M. D., Professor of Physical Diagnosis and General Anaesthesia in the College of Dentistry of the University of Illinois; Professor of Diseases of the Chest in the Chicago Policlinic; Associate Professor of Medicine in the Medical Department of the University of Illinois. Published by Cleveland Press, Chicago.

This is a neatly bound volume containing 207 pages with 197 illustrations. In the preface of the book the author states that this volume was not intended as a treatise on anaesthesia or anaesthetics, but is the outgrowth of the need of such a work for the purpose of teaching the subject of anaesthesia. The author is certainly to be congratulated in the manner which he sets forth the subject in such a concised and practical way. In the first part of the book he gives a good concised history of anaesthesia, and those who took part in the early development of this most important subject. In chapter No. 2 he calls attention, so far as is known, to the true physiological state of the body when under the influence of a general anaesthetic. He discusses in a most intelligible way the advantages and disadvantages of both ether and chloroform, how to overcome any difficulties that may arise in the administration of these agents and giving illustrations of the instruments to be used in case of emergency.

He then takes up the subject of ethyl bromide. While this agent has never found any great favor as an anaesthetic, still the author in this book has discussed the subject in a way that it cannot fail to attract attention from a physiological standpoint, and opens up to the student a field where he cannot fail to become interested along the lines as laid down in this chapter. The chapter on nitrous oxide is one of interest to the student and practitioner of dentistry, because it contains in a very brief manner the very best thoughts and ideas upon this agent as a general anaesthetic. The author has given some splendid illustrations on the apparatus that is usually used for the administration of this agent. However, I fail to find where he has made any mention of the Hurd inhaler, which is an apparatus that is becoming very popular with some dentists, because it is claimed that the operator can prolong the anaesthetic state very much longer than in the methods that have been so universally

used. This apparatus consists of placing the hood over the nose through which the anaesthetic is inhaled, and at the same time the oxygen is taken through the mouth. It is also claimed by some that for dental operations the mouth is left free for the operator. Dr. Richardson of Chicago has called attention to the fact that some patients are incapable of breathing through the nose, consequently this method cannot always be used. In such cases he placed the hood over the mouth and administers the agent in that way, and accomplishes the same result in the end. Some dentists have employed this method of administration through the nose, in cases where they have had painful operations to perform other than that of extracting teeth.

Another method of administering nitrous oxide gas which I find the author failed to mention was that of taking a hard rubber mouth piece and placing in the patient's mouth, the lips being compressed around this tube and the nose being held with the thumb and finger in a way that air may be taken through the nose. This method is one that is universally used by Dr. Slonaker of Chicago. This has the advantage of allowing the operator to have full view of the face in all the various stages of anaesthesia. The subject of nitrous oxide and its administration, also its physiological effects so far as is known, is well treated in this book, and one who is interested in the subject should not fail to review the subject as discussed by the author of this book.

The chapter on local anaesthetics as used by dentists was written by Elgin MaWhinney, who has treated the subject in a very scientific manner. Dr. MaWhinney is very competent to write upon this subject, as he has done considerable experimental study of the various agents as applied to dental operations.

The work as a whole is worthy of high commendation and deserves the attention and study of both student and practitioner.

SYPHILIS IN DENTISTRY.

By L. Blake Baldwin, M. D., and Ezra Read Larned, M. D.,
Chicago.

(Published by E. H. Colgrove, Chicago.)

The title above given is of a book of 120 pages, which is intended for the student and practitioner of dentistry. The author of this book has gathered within these few pages some very valuable material on the subject of syphilis, and no student or prac-

titioner could fail to be interested and benefited by a careful and painstaking review of the book. Perhaps there are two criticisms that might be made. One is that the author would be a little inclined, I think, to impress the dental student that possibly all mucous patches are syphilitic patches, which of course is by no means the case. The other criticism that might be offered is that the author is inclined to the belief from his standpoint of observation that pyorrhea alveolaris might be one of the sequels, or accompanying syphilitic infection.

The keen observing practitioner of dentistry would not by any means carry out the observations as recited by the author. Of course, it will be understood that dentists as a rule have far less privileges of extending their observations and inquiries into the general constitutional conditions of patients, coming to them for strictly dental treatment. However, there has been a number of men for a great many years investigating, studying and observing cases of pyorrhea alveolaris, and very few have observed that it had any connections with syphilitic lesions of any kind; however, it is not impossible and it is quite probable that both diseases many times appear in the same individual.

In 1900, before the International Dental Congress of Paris, I called attention to the fact that individuals suffering from pyorrhea alveolaris was treated with potassium iodid, there appeared a great change in the bacteriological findings in those persistent cases of pyorrhea alveolaris. Clinicians have long since recognized the importance of potassium iodid in the treatment of chronic inflammatory processes, especially in the removal of chronic tumors as syphilitic gummata, chronic pleural exudates, indolent ulcers and such chronic specific inflammatory conditions as are found in pyorrhea alveolaris and actinomycosis.

The criticisms herein offered is not intended to detract from the value of this book, but is to call the attention of the dental student to the fact that there are other patches that appear on the mucous surfaces of the oral cavity than those of syphilitic origin, and that any disease may be a predisposing factor of pyorrhea alveolaris.

As has already been stated, this little volume contains some valuable information and should be carefully studied by those who are interested in the pathological phenomena, that are constantly being met with in the oral cavity.



OBITUARY

DR. WILLAM ANDRE CAMPBELL.

Dr. William Andre Campbell, who died recently at his residence, 73 Hancock street, of a complication of ailments, after an illness extending over a period of more than two months, was one of the best known and generally liked dentists in Brooklyn. For thirty years he had conducted an establishment in Gold street, and since his sixteenth year had been identified with the profession of dental surgery in this borough. During his long residence here he always lived in the house in which he died. He was prominently identified with the social life of Brooklyn and kept up a membership in several important clubs and societies, including the Union League Club, the Marine and Field Club and the Columbia Boat Club. He was vice-president and leading member of the Brooklyn Dental Society and belonged to the Second District Dental Society and the Odontological Society of Manhattan. He was also a prominent member of the New York State Dental Society.

William Andre Campbell, who was born in Passaic, N. J., Dec. 30, 1844, boasted of a famous ancestry, dating back to the clan Campbell in Scotland. He was directly descended from Lieutenant Colonel William Campbell, a second son of the famous Prince of Argyle, and his grandfather was William Campbell, who was a nephew of the revolutionary hero, David Campbell. Dr. Campbell's parents were David and Hannah Campbell of Passaic, N. J., old and highly respected residents in that ancient town. Educated in the public schools of Passaic, Mr. Campbell began the practice of dentistry at the age of 16 in the office of Dr. H. N. Stratton, where he stayed for nearly eight years. In 1877 he was honored with the degree of master of dental surgery and during his long career he succeeded in making several innovations and improvements in the art in which he was conspicuous.

In September, 1875, Dr. Campbell married Miss Martha H. Benedict of Danbury, Conn., who survives him, together with two daughters, Amy and Marian Diven, and a son, David Kenneth. Deceased has traveled extensively in the United States and abroad and was a cultivated raconteur and wit, whose demise will make vacant a place in local circles that will not easily be filled.

DR. C. A. WOODWARD.

Dr. Corydon A. Woodward of No. 20 West Forty-fifth street, formerly president of the New York Odontological Society of this city, died in St. Lukes Hospital Saturday afternoon from Bright's disease. He was sixty-three years old. Dr. Woodward was a native of Maine and studied dentistry in the Baltimore Dental College, graduating in one of the earliest classes from that institution. He practiced for a short time in Rhode Island and then went to Cuba, where he remained during the insurrection, which began in 1868. He came to this city in 1871. He is survived by a widow, who was Miss Grace Parker Prentiss Parmele of Providence, and by two sons and three daughters.

DR. S. L. MINTZER.

Dr. Samuel L. Mintzer, for years a prominent resident of Southwark and one of the oldest and best known dentists in Philadelphia, died on Sunday at the residence of his daughter at Elwyn. Dr. Mintzer, who was in his eighty-third year, was one of the first men to practice dentistry in the city of Philadelphia and was one of the founders of the Philadelphia College of Dental Surgery, in which he was presented with honorary membership in 1853, after declining the position of dean. He was the inventor of many dental appliances that are in general use.



NOTICES OF MEETINGS

National Dental Association, Asheville, N. C., July 28.

National Association of Dental Examiners, Asheville, N. C., July 24, 25, 26 and 27.

State Dental Meetings.

California State Dental Society, San Francisco, June.

Colorado State Dental Association, Denver, June 16, 17 and 18.

Connecticut State Dental Association, Hartford, April 21 and 22.

Georgia State Dental Society, Tallalah Falls, June 9.

Florida State Dental Society, Seabreeze Beach, May 27.

Idaho State Dental Society, Boise City, June 9.

Indiana State Dental Association, Indianapolis, June 30, July 1.

Maine Dental Society, July 21, 22 and 23.

Kentucky State Dental Association, Louisville, May 25, 26, 27.

Illinois State Dental Society, May 12, 13, 14, Bloomington.

Iowa State Dental Society, Sioux City, May 5, 6, 7.

Michigan Dental Association, Petoskey, July 7, 8, 9.

Massachusetts State Dental Society, Boston, June 3 and 4.

Minnesota State Dental Association, Minneapolis, Sept. 1.

Mississippi Dental Association, Vicksburg, May 19.

Missouri State Dental Association, Kansas City, May.

Nebraska State Dental Society, Lincoln, May 18.

New Jersey State Dental Society, Asbury Park, July 15, 16, 17

New York State Dental Society, Albany, May 13 and 14.

Ohio State Dental Society, Columbus, Dec. 1, 2 and 3.

Tennessee Dental Association, Chattanooga.

Texas State Dental Association, Houston, May, 1903.

Pennsylvania State Dental Society, Harveys Lake, July 7, 8, 9.

Central Michigan Dental Association, Grand Ledge, May 13, 14.

ILLINOIS STATE DENTAL SOCIETY.

The thirty-ninth annual meeting of the Illinois State Dental Society will be held in Bloomington May 12, 13 and 14. A large program of interesting essays and clinics has been prepared and a splendid meeting is expected.

The railroads throughout the State and from St. Louis will make a rate of a fare and one-third, certificate plan, for the round trip. All are cordially invited. Remember the date.

HART J. GOSLEE, Secretary.

A. H. PECK, President.

DENTAL SOCIETY OF THE STATE OF NEW YORK.

To the Profession: The thirty-fifth annual meeting of our society will be held in Albany, N. Y., Wednesday and Thursday, May 13 and 14, convening promptly at 10 o'clock on the morning of the first day in Assembly Hall at the Hotel Ten-Eyck, where the committee of arrangements have made special rates for all attending the convention. The business committee have been indefatigable in their effort to make this a most interesting and instructive meeting, as a glance at the list of essayists will testify. The president requests you to be present when the gavel falls at the opening session and extends a cordial invitation to all reputable members of the profession to attend this meeting.

Fraternally,

R. H. HOFHEINZ, D. D. S., President.

W. A. WHITE, D. D. S., Secretary.

Phelps, N. Y., March 11, 1903.

VERMONT STATE DENTAL ASSOCIATION.

The Vermont State Dental Association held its annual meeting March 18, 19 and 20 at Burlington. The following officers were elected: President, Dr. J. H. Jackson; first vice-president, Dr. H. Burbridge; second vice-president, Dr. G. S. Baker; secretary, Dr. T. Mound; corresponding secretary, Miss Grace Bosworth; treasurer, Dr. W. G. H. Munsell.

THE VALLEY DISTRICT DENTAL SOCIETY.

The Valley District Dental Society of Massachusetts met March 16 at Northampton, Dr. W. W. Swazy of Springfield presiding as chairman. Papers were read by Dr. J. M. Fay of Northampton and Dr. J. N. Davenport of Northampton.

RACINE, WIS.

The dentists of Racine, Wis., met March 16 for the purpose of arranging an organization for educational and social purposes.

IOWA STATE DENTAL SOCIETY.

The next annual meeting of the Iowa State Dental Society will be held at Sioux City May 5, 6 and 7.

W. R. CLACK, Secretary.

THE MISSOURI STATE DENTAL ASSOCIATION.

The Missouri State Dental Association will hold its annual convention in Kansas City May 19, 20 and 21.

SOUTH DAKOTA STATE BOARD OF DENTIST EXAMINERS.

The next meeting of the South Dakota State Board of Dental Examiners will be held at Lead, S. D., May 13 and 14, beginning promptly at 9 a. m. No candidates for examination will be received after 9 a. m. on the 13th. Those desiring to attend this meeting should take advantage of the Odd Fellows' state convention excursion rate. This excursion leaves Sioux City May 11 at 7:30 p. m.

The board will also hold a meeting at Redfield, S. D., on June 2 and 3. No candidates will be received for examination at this meeting after 9 a. m. on the 2d. The South Dakota State Dental Society meeting will be held at the same place June 3, 4 and 5. All candidates taking these examinations should come prepared to insert gold, silver and cement fillings.

Yours truly,

G. W. COLLINS.

MICHIGAN STATE DENTAL ASSOCIATION.

The forty-seventh annual meeting of the Michigan Dental Association will be held in Petoskey, Mich., July 7, 8 and 9, 1903.

F. H. ESSIG, Secretary.

ALUMNI ASSOCIATION OF LOUISVILLE.

The sixteenth annual meeting of the Alumni Association of the Louisville College of Dentistry was held March 28, and closed with a banquet in the evening.

CHICKASAW NATION DENTAL SOCIETY.

The Dental Society of the Chickasaw Nation, I. T., has been organized with the following officers: Dr. Abernathy, president; Dr. Nicholson, vice-president, and Dr. Pennell, secretary and treasurer.

ODONTOLOGICAL SOCIETY OF ROCKFORD, ILL.

The Odontological Society held, March 20, what the members declared was one of the best meetings of the season. A good dinner and a good lecture by a prominent member of the profession made up the entertainment and the eighteen dentists who comprised the company thoroughly enjoyed the occasion.

The dinner was served in the ordinary at the Nelson, and was followed by the lecture, which was given by Dr. F. B. Noyes of Chicago, the guest of honor. Dr. Noyes is a professor of histology in the Northwestern Dental College and stands high in the profession. His discourse treated of the structure of the teeth and it was finely illustrated. The subject was handled in a most comprehensive way and was decidedly interesting and profitable.

DENTAL ASSOCIATION DOES HIGH HONOR TO DR. S.
A. FREEMAN, OLDEST PRACTITIONER OF THE
PROFESSION IN BUFFALO—STEVENS'
BILL INDORSED.

Dr. S. A. Freeman, the oldest practicing dentist in Buffalo, was the guest of honor at a banquet tendered by the Dental Association of Buffalo. For forty years Dr. Freeman has been practicing dentistry in Buffalo and he had so many friends among the members of his profession that the members of the Dental Association elected to banquet him, and the affair was held in the parlor floors of the Iroquois. One hundred of the practicing dentists of the city sat down to the banquet tables.

Prior to the banquet a meeting of the Dental Association was held and it was unanimously voted to indorse the Stevens bill now before the legislature, which provides that the control of the graded schools be under the control of the Board of Regents, the same as the high schools.

At the banquet table Dr. C. W. Stainton acted as toastmaster. The toast, "Our Guest," was responded to by Dr. Freeman. He told how the new methods of dentistry had supplanted the old barbaric methods. Other toasts and responses were "Early Reminiscences," Dr. M. B. Straight; "The Dental Profession," Dr. D. S. Butler; "National Dental Association," Dr. John Burkhardt, Mayor of Batavia; "Dental Associations of New York State," Dr. R. H. Hofheinz.

ODONTOLOGICAL SOCIETY OF WESTERN PENNSYLVANIA.

DENTISTS MEET AND CHOOSE HEADS.

BUSINESS TRANSACTED AND MANY INTERESTING PAPERS READ BY MEMBERS OF THE ASSOCIATION.

The first day's session of the annual meeting of the Odontological Society of Western Pennsylvania was held March 10th in the lecture-room of the Dental College of the Western University of Pennsylvania, Penn avenue and Tenth street. After the organization the following officers were elected for the ensuing year: President, Dr. C. C. Taggart, Pittsburg; vice-president, Dr. George W. Gage, Pittsburg; secretary, Dr. B. M. Loar, Mt. Pleasant; treasurer, Dr. J. A. Libby, Pittsburg.

When the session opened there were about 300 dentists present, a large number of them being from eastern Ohio and northern West Virginia. The annual address was delivered by the retiring president, C. B. Bratt of Allegheny.

After the business meeting adjourned, which was at noon, the executive committee held a meeting and arranged for the afternoon session, which was opened by H. H. Harrison of Wheeling, who read a poem entitled "Advancement." Papers treating on the subject of dentistry from several points of view were read by J. G. Palmer of New York, S. L. McCurdy, Pittsburg, and C. H. Land, Detroit. At the evening session papers were read by E. C. Kirk of Philadelphia and Eugene S. Talbot of Chicago.

The session was continued and clinics were held by James E. Dowden, Fairmount, W. Va.; T. H. Whitesides, Youngstown, Ohio; H. W. Arthur, Pittsburg; C. H. Land, Detroit; Walter H. Fundenberg, George Francis Myers and A. G. Reinhardt, Pittsburg. At this afternoon's session papers will be read by L. Ashley Fraught, Philadelphia; J. W. Cowan, Geneseo, N. Y.; E. C. Kirk, Philadelphia, and G. V. I. Brown, Milwaukee.

KENTUCKY STATE DENTAL ASSOCIATION.

The Kentucky State Dental Association has fixed May 25, 26 and 27 for its meeting in Louisville.

ITEMS

Dr. Frederick C. Stote is now located at Russell, Iowa.

Dr. Trickans, formerly of Peoria, has located in Elkhart, Ind.

Dr. Snyder of Des Moines, Ia., lost his home by fire March 16.

Dr. F. A. Dean, recently of Chicago, has settled in Colville, Wash.

Dr. E. W. Henwood opened an office in Auburn, Ind., last month.

Dr. N. G. Slaughter, formerly of Dallas, Ga., is now located at Athens.

Dr. C. Leroy Sample, formerly of Harvard, Neb., is now located at Aurora.

Dr. T. M. Sager of Marysville, O., is dangerously ill with softening of the brain.

Dr. C. Carroll of Claysville, Pa., left March 23 for Knoxville, where he will open an office.

Dr. Ray McCombs of Utica, N. Y., will go to New York, where he will continue his work.

Dr. Ross Gibson, formerly of West Alexander, Pa., is now located in East End, Pittsburg.

Dr. Frederick Knott was chosen as dean of the Des Moines College of Dental Surgery April 2.

The dental office of Dr. Thomas Cochran of Alexandria, Va., was robbed April 2 of a lot of gold.

Dr. J. Sennet of Champaign will return to Bloomington, where he was formerly established in business.

A small fire of mysterious origin broke out March 24 in the laboratory of Dr. F. R. Mallory of Toronto, Canada.

The Odontographs of Kansas City entertained at dinner March 14 in honor of Dr. O'Brien of Lawrence, Kan.

Dr. P. J. Brown of Racine was burned March 23 by an explosion of gases in his furnace, which he was attending.

Dr. Charles H. Bartlett, Wheeling, W. Va., has received his commission as colonel, aide-de-camp, West Virginia national guard.

Dr. J. D. Smith, who has practiced dentistry in Ashland, Ill., for eight years, has moved to Springfield, where he will open an office.

Out of eighty-five candidates who were examined by the Massachusetts state board of registration only forty-nine reached the required standard.

Dr. William S. Flower, Pittsburg, Pa., and Miss Elnora Lockhart eloped March 28. Mrs. Flower's father is the second wealthiest man in Pittsburg.

Dr. Lewis A. O'Brien, a dentist whose name was associated with the elopement of Crown Princess Louise of Saxony and Andre Giron, arrived in America about the middle of March.

Dr. George V. I. Brown of Milwaukee, Wis., will go to Madrid, Spain, next month to represent the United States in the International Medical Congress. Dr. Brown's commission is signed by the assistant secretary of state.

George F. Eades, the young dentist who pleaded guilty to counterfeiting, was sentenced March 12 to eighteen months in the penitentiary at Fort Madison, Iowa, and to pay a fine of \$2,000. Eades was arrested in Council Bluffs for counterfeiting \$5 gold pieces, which he forced his young wife to pass in Omaha and South Omaha.

March 27 suit was brought against Dr. William E. Dickson, a dentist of Philadelphia, by Mary E. Donahue to recover damages for alleged negligence in extracting a tooth. The young woman said that on January 15 last she went to the dentist's office to have a molar extracted and that Dr. Dickson dislocated her jaw.

New York, March 14.—W. W. Waddell, a Presbyterian missionary in the interior of Brazil, traveled all the way to New York to have a tooth extracted. Mr. Waddell was convinced that he had cancer of the jaw, and, as there were no experienced physicians or dentists at hand, he determined to go where he could get proper treatment.

Dr. Robert Strobridge, a dentist at 61 West Seventieth street, said that it was one of the easiest jobs he ever had. Mr. Waddell had suffered much agony for a long time from the aching tooth. There was no cancer. It was a sore tooth and nothing more.

FUND FOR FREE DENTISTRY.—The management of Tufts College, Boston, Mass., has sent a circular to those interested in the success of the dental department inviting them to contribute to a worthy scheme by which the charitable work of that department can be carried out and enlarged. The committee appointed has reported that it has found the possibilities of the school equal to any demand that may be made upon it and indorsed the established custom of charging a small sum for dental operations performed by advanced students. They also found that of the daily average of 120 patients treated at the dental school thirty-six were able to pay the cost of the material and thirty-four were unable to make any payment. The calls from those who are unable to pay are increasing and the committee recommends that a fund be established to provide material for operations that must be made gratuitously. Not only do they recommend this for the benefit of those who apply but as well for that of the advanced students who would thus be unable to relieve much suffering by improving the teeth of many deserving individuals.

Dr. Edwin M. Stealey, a well known dentist of San Francisco, Cal., took strychnine in his office, then telephoned to his wife and calmly awaited death.

Despite the efforts of three physicians he died a few hours later.

Mrs. Stealey and her mother, Mrs. B. F. Hawes, hurried down town, got the key from the janitor, unlocked the door of the doctor's office and found him where he said he would be. He was stretched at full length on the lounge perfectly conscious and, though a little pale, was apparently suffering no pain. Even then Mrs. Stealey could hardly believe that her husband had taken

poison, but an empty vial labeled "strychnine," which lay on the floor beside the lounge, convinced her. She ran to the office of Dr. D. F. Ragan, which is in the same building, and he summoned Drs. Thrasher and Travers to assist him. Dr. Ragan looked at the dentist resting peacefully on the lounge and then at the poison vial.

"You did not take that?" he asked incredulously.

"Oh, yes I did," replied Stealey, with half a smile on his face.

"How did you take it?"

"I dug the crystals out of the bottle and dissolved them in that glass," explained the dying man. "You will find a little of the solution left. I do not need it, for I took enough to do the business."

Antidotes were immediately administered and the stomach pump was used, but Stealey grew rapidly weaker, but suffered none of the violent convulsions which almost invariably follow strychnine poisoning. It was soon apparent that he was beyond medical assistance, and at 7:45 he was dead.

"I know of no possible motive which could have prompted my husband to commit suicide," said Mrs. Stealey. "If he was ever despondent I never knew it. Our domestic life has always been as happy as possible. There has been absolutely nothing in his home life which could have impelled him to commit suicide."

An opinion from the press on the Clark bill:

Several bills have been introduced in the legislature which relate to the practice of medicine and dentistry, and one of them, the Clark act to establish a state board of dental examiners, was passed by the senate March 11th. This measure has a special interest for newspapers and for dentists who advertise because of a section which reads as follows:

"The board may refuse to issue the certificates provided for in this act to individuals who have by false or fraudulent representation obtained or sought to obtain practice in their profession, or by false or fraudulent representation of their profession have obtained or sought to obtain money or any other things of value, or who advertise under names other than their own, or for any other unprofessional or dishonorable conduct, and the board for like causes may revoke such certificates and the certificates provided for in this act."

The fear that a selfish motive may be ascribed to it should not estop the press from combating this provision because it contains a preposterous mixture of offenses and prepares the way for serious injustice. The expression "who advertise under names other than their own" is far too comprehensive, since fraud and misrepresentation are the only things to be reached, and they may not be contemplated in the style of the business. The term "unprofessional" should be excluded from all such legislation because it erects a voluntary code of professional ethics into a prohibitory and punitive statute. All advertising is considered unprofessional by the orthodox physicians of the older schools, but certainly a competent doctor is not made incompetent by advertising, and his right to advertise should not be restricted by giving the force of law to a rule of his competitors. Neither should the young practitioners be kept down by these devices of a comfortable conservatism.

While we are on this subject a word should be said also concerning another bill which would compel the proprietors of patent medicines to add the formula of their preparations to their labels. This would not only affect advertising but absolutely destroy property rights of unquestionable validity. It is inherently wrong and vicious, and while it is desirable that the public should be protected against quacks and impostors it is equally desirable that the protective measures should not themselves be open to the charge of false or fraudulent representation.—Chicago Record-Herald.

DEATHS.

Dr. F. Mulholland, a prominent dentist of Manitowoc, and the son of one of the leading merchants of the city, died March 10.

Dr. G. M. Rootes, for many years a dentist of Kansas City, Mo., died at his home March 13 of heart trouble and pneumonia.

Dr. A. G. Bauer, a well known dentist of Milwaukee, Wis., is dead.

Dr. John Mahoney of Richmond, Va., died April 2 in his 80th year.

Dr. S. E. Clark of Fort Collins, Colo., died March 26 in his sixty-second year. He located at Fort Collins in 1879.

Dr. G. H. Crary, dentist, died at Red Wing, Minn.



THE NEW DENTAL LAW.

In our editorial on page 268 we assume that the bill now before the lower house has become a law, but on account of the fight on the traction bill, the dental bill has been laid aside and may be delayed for some time.

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